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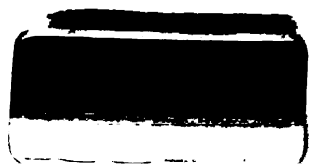
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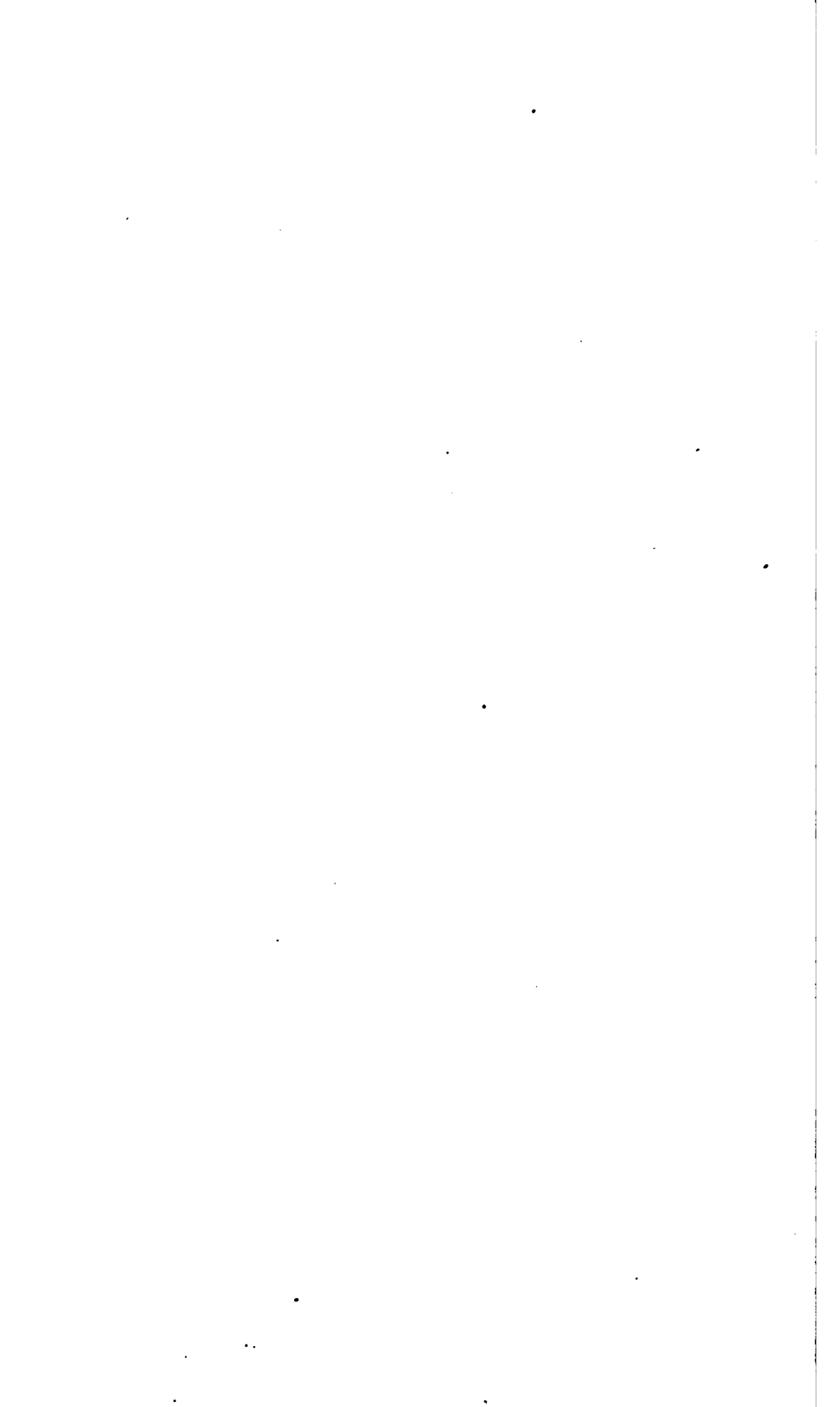
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THROUGHOUT THE YEAR.**

A WORK USEFUL TO

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AND ALSO

TO ALL PERSONS WHO CULTIVATE TREES AND SHRUBS.

John William
By P. W. WATSON, F.L.S.

HONORARY MEMBER OF THE HULL LITERARY AND PHILOSOPHIC SOCIETY.

COTTINGHAM, NEAR HULL.

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CYTISUS NANUS. (W. E.)

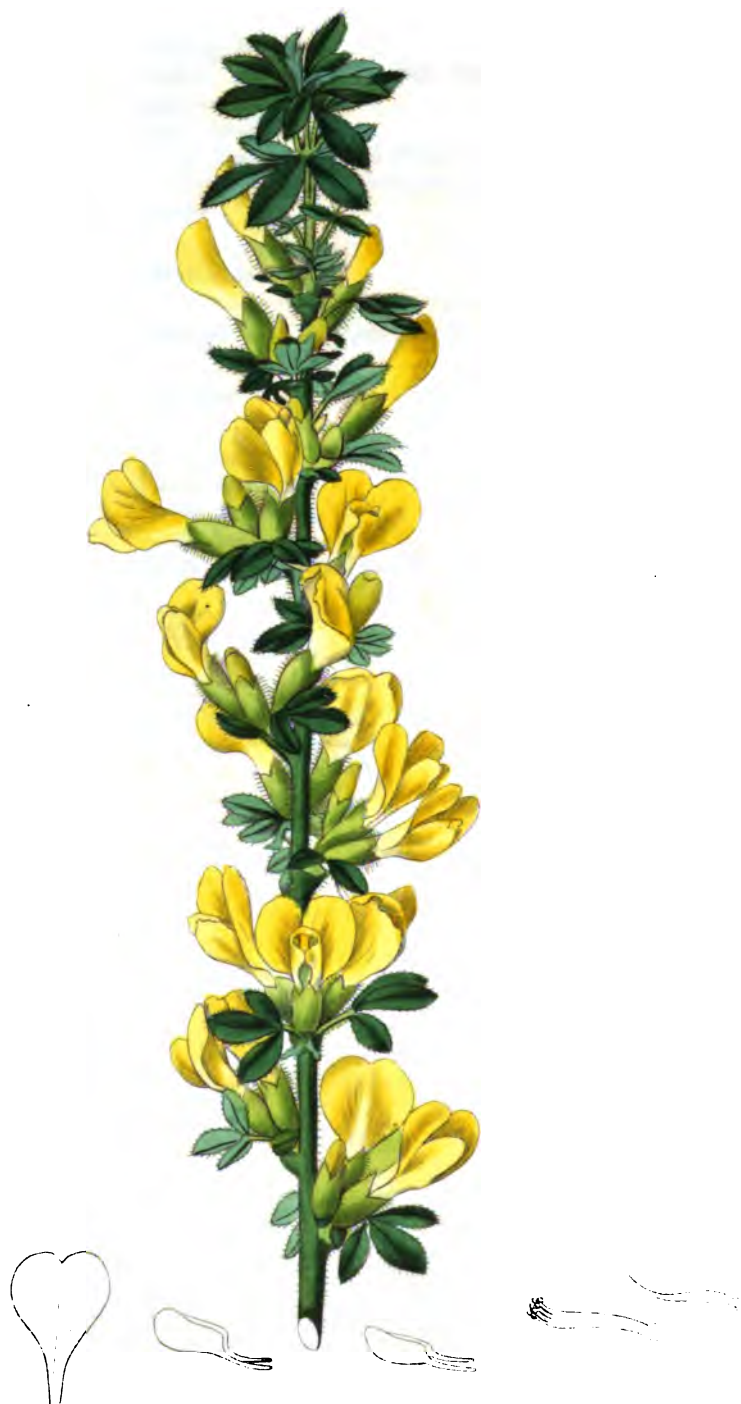
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Dwarf Cytisus.

<i>Raceme</i>	<i>terminal, 1-sided-sub 4-flowered.</i>
<i>Leaflets</i>	<i>obovate.</i>
— <i>Surface</i>	<i>strigose-pubescent.</i>
<i>Calyx</i>	<i>deeply 3-parted. (W. E.)</i>
<i>Subshrub</i>	<i>procumbent, 9-12 inch.</i>
<i>Stem</i>	<i>cylindric, purplish.</i>
— <i>Branches</i>	<i>„ , covered with adpressed white hairs.</i>
<i>Petiole</i>	<i>(common) = foliole, covered with adpressed hairs.</i>
„	<i>(foliolar) very short, hairy.</i>
<i>Leaves</i>	<i>alternate, 3-nate.</i>
— <i>Leaflets</i>	<i>obovate.</i>
— <i>Margin</i>	<i>entire, ciliate with long hairs.</i>
— <i>Base</i>	<i>tapered.</i>
— <i>Apex</i>	<i>obtuse, short-mucronate.</i>
— <i>Surface</i>	<i>dark green, subglab.</i>
— <i>Subface</i>	<i>paler, with solitary, long, white hairs.</i>
— <i>Axis</i>	<i>prominent, long-white-haired.</i>
— <i>Branches</i>	<i>0.</i>
<i>Inflorescence</i>	<i>subumbellate, 3-5-flowered, 1-sided.</i>
<i>Peduncles</i>	<i>densely white-haired.</i>
— <i>Pedicels</i>	<i>= calyx, „ .</i>
<i>Bractes</i>	<i>3 at base of calyx, linear-lanceolate, acute, very hairy.</i>
<i>Calyx</i>	<i>long, horizontally-haired, 3-parted.</i>
— <i>Segments</i>	<i>(under one) 3-fid. the 2 lateral divisions of this acute and the mid-one linear! and very acute. (the 2 behind the standard) lanceolate, acute and nearly = to it.</i>
<i>Corol.</i>	
— <i>Standard</i>	<i>subreflected, orbicular, emarginate, glab. within, subsericeous without.</i>
— <i>Wings</i>	<i>embracing the keel, rather shorter than the standard, with long, 1-sided blade and very short claw.</i>
— <i>Keel</i>	<i>2-petaled, boat-form, with short claws, inclosing the genitalia.</i>
<i>Stamens</i>	<i>rather shorter than the pistil, 1-delphous, ascending, inserted at base of calyx.</i>
— <i>Filaments & }</i>	
— <i>Sheath</i>	<i>glab.</i>

— Anthers . . .	oblong, basifixt.
Pistil	naked, rather longer than stamens.
— Style	ascending, glab.
— Stigma	very small, simple.
Legume	long, linear, covered with white, horizontal hairs, ending with persisting style.
— Seeds	many.
Floration	26th July, 1822.
Place	Messrs. C. Loddiges and Sons', Hackney.
Country	Levant.
Dissection . . .	f. 1. calyx. —2. standard. —3. one wing. —4. half of the keel. —5. stamens and pistil,





CYTISUS ELONGATUS. (W. & K.)

Long-branched Cytisus.

Flowers	<i>pedunculate, axillary, subquaternate.</i>
Calyx	<i>tubular.</i>
— Sepals	<i>obovate.</i>
Stem	<i>erect.</i>
— Branches . . .	<i>elongated. (W. E.)</i>
Shrub	<i>upright.</i>
Stem	<i>cylindric, covered with black, spreading hairs.</i>
— Branches . . .	<i>long, straight.</i>
Petiole	<i>(common) short, flat with hairy margin.</i>
Leaves	<i>ternate.</i>
— Leaflets . . .	<i>lanceolate.</i>
— Margin	<i>intire, ciliate.</i>
— Base	<i>attenuate.</i>
— Apex	<i>obtuse-angular, tipt with a transparent mucrone.</i>
— Surface	<i>few-haired.</i>
— Subface . . .	<i>sericeous with adprest hairs.</i>
Inflorescence.	
— Flowers	<i>1-3, lateral, sessile, continued along the branches.</i>
— Pedicels . . .	<i>short.</i>
Calyx	<i>covered with long, horizontal hairs,</i> <i>2 labiate { 2 obtuse-angular dents.</i> <i> { 1 „ dent.</i>
Corol	<i>glab.</i>
— Standard . . .	<i>reflected at an acute \angle from the keel.</i>
— Limb	<i>suborbicular, emarginate.</i>
— Claw	<i>long.</i>
— Wings	<i>obtusely cleaver-shaped</i>
— Claws	<i>= limb.</i>
— Keel	<i>2-petaled, shaped like the wings.</i>
Stamens	<i>1-delphous, in-a tube.</i>
— Filaments . . .	<i>short, $\frac{1}{2}$ = tube of stamens and sub =.</i>
— Anthers	<i>oblong.</i>
Pistil.	
— Ovary	<i>long-white-haired on the upper margin.</i>
— Style	<i>ascending, rather longer than stamens.</i>
— Stigma	<i>simple.</i>
Floration	<i>25th May, 1821.</i>
Place	<i>Messrs. Whitley and Co's., Fulham.</i>
Country	<i>Hungary.</i>



CYTISUS ELONGATUS. (W. & K.)

Long-branched Cytisus.

Flowers	<i>pedunculate, axillary, subquaternate.</i>
Calyx	<i>tubular.</i>
— Sepals	<i>obovate.</i>
Stem	<i>erect.</i>
— Branches	<i>elongated. (W. E.)</i>
Shrub	<i>upright.</i>
Stem	<i>cylindric, covered with black, spreading hairs.</i>
— Branches	<i>long, straight.</i>
Petiole	<i>(common) short, flat with hairy margin.</i>
Leaves	<i>ternate.</i>
— Leaflets	<i>lanceolate.</i>
— Margin	<i>intire, ciliate.</i>
— Base	<i>attenuate.</i>
— Apex	<i>obtuse-angular, tipped with a transparent mucrone.</i>
— Surface	<i>few-haired.</i>
— Subface	<i>sericeous with adpressed hairs.</i>
Inflorescence.	
— Flowers	<i>1-3, lateral, sessile, continued along the branches.</i>
— Pedicels	<i>short.</i>
Calyx	<i>covered with long, horizontal hairs,</i> <i>2 labiate { 2 obtuse-angular dents.</i> <i> { 1 „ dent.</i>
Corol	<i>glab.</i>
— Standard	<i>reflected at an acute \angle from the keel.</i>
— Limb	<i>suborbicular, emarginate.</i>
— Claw	<i>long.</i>
— Wings	<i>obtusely cleaver-shaped</i>
— Claws	<i>= limb.</i>
— Keel	<i>2-petaled, shaped like the wings.</i>
Stamens	<i>1-delphous, in a tube.</i>
— Filaments	<i>short, $\frac{1}{2}$ = tube of stamens and sub =.</i>
— Anthers	<i>oblong.</i>
Pistil.	
— Ovary	<i>long-white-haired on the upper margin.</i>
— Style	<i>ascending, rather longer than stamens.</i>
— Stigma	<i>simple.</i>
Floration	<i>25th May, 1821.</i>
Place	<i>Messrs. Whitley and Co's., Fulham.</i>
Country	<i>Hungary.</i>







CYTISUS WOLGARICUS. (W.)

Wing-leaved Cytisus.

<i>Raceme</i> . . .	<i>terminal, 1-sided.</i>
<i>Leaves</i> . . .	<i>pinnate, canescent.</i>
— <i>Leaflets</i> . . .	<i>subrotund-elliptic. (W.)</i>
<i>Shrub</i> . . .	<i>upright.</i>
— <i>Branches</i> . . .	<i>dark-purple-brown, glab.</i>
— <i>Shoots</i> . . .	<i>drab-color, gland-pubescent.</i>
<i>Petiole</i> . . .	<i>(common) pubescent, mixed with pedicel'd glands.</i>
" . . .	<i>(foliolar) very short.</i>
<i>Leaves</i> . . .	<i>alternate, impair-pinnate.</i>
— <i>Leaflets</i> . . .	<i>6½ pair, subelliptic (ovate-elliptic.)</i>
— <i>Margin</i> . . .	<i>intire, gland-ciliate.</i>
— <i>Base</i> . . .	<i>ovate.</i>
— <i>Apex</i> . . .	<i>acute-angular.</i>
— <i>Surface</i> . . .	<i>subpubescent.</i>
— <i>Subface</i> . . .	<i>tomentose.</i>
— <i>Axis</i> . . .	<i>pubescent.</i>
— <i>Branches</i>	<i>sunk.</i>
<i>Raceme</i> . . .	<i>axillary.</i>
<i>Peduncles</i> . . .	<i>3-4 inch, gland-pubescent.</i>
— <i>Pedicels</i> . . .	<i>very short.</i>
<i>Bracteas</i> . . .	<i>membranous, short, acuminate, pubescent.</i>
<i>Calyx</i> . . .	<i>densely covered with pedicel'd glands, rather tubular.</i>
— <i>Base</i> . . .	<i>hunched.</i>
— <i>Segments</i> . . .	<i>3, in =, upper 2-dentate, all acuminate.</i>
<i>Corol.</i>	
— <i>Standard</i> . . .	<i>dilated upwards, emarginate, glab.</i>
— <i>Claw</i> . . .	<i>rather rigid.</i>
— <i>Wings</i> . . .	<i>cleaver-shaped, obtuse.</i>
— <i>Claw</i> . . .	<i>short.</i>
— <i>Keel</i> . . .	<i>2-lobed, emarginate.</i>
— <i>Lobes</i> . . .	<i>cleaver-shaped.</i>
— <i>Claws</i> . . .	<i>short.</i>
<i>Stamens</i> . . .	<i>10, 1-delphous, in =.</i>
— <i>Filaments</i> . . .	<i>subulate, glab.</i>
— <i>Anthers</i> . . .	<i>oblong, medifixt (a little above base).</i>
<i>Pistil</i> . . .	<i>= stamens.</i>

— Ovary . . .	oblong, pubescent.
— Style . . .	slender, tapering, ascending, pubescent $\frac{1}{2}$ its length.
Floration . . .	16th July, 1821.
Place	Mr. James Lee's, Hammersmith.
Country . . .	Hills near the Wolga.
Dissection . . .	f. 1. legume. —2. seed.





ASTRAGALUS TRAGACANTHA. (W.)

Great Goat's Thorn.

<i>Peduncle</i> . . .	<i>sub 4-flowered, = leaves.</i>
<i>Calyx (Dents)</i> .	<i>short, ovate.</i>
<i>Petioles</i> . . .	<i>spinescent.</i>
<i>Leaflets</i> . . .	<i>elliptic, hoary. (W.)</i>
<i>Shrub</i> . . .	<i>low, stiff, spinous.</i>
<i>— Branches</i> . .	<i>gray, leprous, thickly set with 2 inch-long spines.</i>
<i>Petiole</i> . . .	<i>(common) few-haired.</i>
„ . . .	<i>(foliolar) very short.</i>
<i>Leaves</i> . . .	<i>thick, soft with hairs, abruptly pinnate.</i>
<i>— Leaflets</i> . .	<i>8 pair, small, oblong.</i>
<i>— Margin</i> . .	<i>intire.</i>
<i>— Faces</i> . .	<i>tomentose.</i>
<i>— Nervation</i> .	<i>0.</i>
<i>Inflorescence</i> .	<i>lateral, axillary.</i>
<i>— Peduncles</i> .	<i>4-flowered, hairy.</i>
<i>Bracteas</i> . . .	<i>very hairy, 1 at base of each pedicel and 2 on the middle.</i>
<i>Calyx</i> . . .	<i>subcylindric, covered with adpresst hairs, 5-dentate, 3 approached ones oblong!</i>
<i>Corolla</i> . . .	<i>rather longer than calyx.</i>
<i>— Standard</i> . .	<i>subparallel with keel, tapering.</i>
<i>— Keel</i> . . .	<i>purplish, emarginate.</i>
<i>— Wings</i> . . .	<i>longer than the keel, obtusely cleaver-shaped, narrow.</i>
<i>— Claw</i> . . .	<i>= the limb.</i>
<i>Floration</i> . . .	<i>29th May, 1821.</i>
<i>Place</i> . . .	<i>Messrs. Loddiges and Sons', Hackney.</i>
<i>Country</i> . . .	<i>On the Ural Mountains, Tauria.</i>







HYPERICUM ELATUM.

Tall St. John's Wort.

<i>Flowers</i>	3-gynous.
<i>Calyx</i>	lanceolate-ovate, acute.
<i>Stamens</i>	longer than the corol.
<i>Leaves</i>	ovate, oblong. (H. K.)
<i>Subshrub</i>	3-4 F.
<i>Branches</i>	2-edged, glab.
<i>Leaves</i>	opposite, sessile, subcordate-lanceolate.
— <i>Margin</i>	intire.
— <i>Base</i>	broad, subcordate.
— <i>Apex</i>	obtuse.
— <i>Faces</i>	glab.
— <i>Axis &</i>	prominent., glab.
— <i>Branches</i> }	
<i>Corymb</i>	terminal, few-flowered, or flowers solitary axillary.
<i>Peduncle &</i> }	green, glab.
— <i>Pedicels</i> }	
<i>Bracteas</i>	small, acute, at branchings of corymbs and middle of pedicels.
<i>Calyx</i>	glab. 5-parted.
— <i>Segments</i>	elliptic, acute, punctured.
— <i>Sinus</i>	acute, closed.
<i>Corol</i>	5-petaled.
— <i>Petals</i>	intire, obtuse.
<i>Stamens</i>	numerous (not phalanxed), sub=petals, inserted on a membrane surrounding the ovary.
— <i>Filaments</i>	glab. subulate.
— <i>Anthers</i>	medifixt, broader than long, 2-lobed.
— <i>Lobes</i>	1-sulcate.
<i>Pistil</i>	= stamens.
— <i>Ovary</i>	conic, shining, glab. free.
— <i>Styles</i>	3, subglab.
— <i>Stigmas</i>	simple, small, shining.
<i>Floration</i>	6th Aug. 1821.
<i>Place</i>	Arboretum, Kew.
<i>Country</i>	?

Dissection . . .	f. 1. part of the stem to shew the 2 angular processes running on each side.
<i>Observation.</i>	This species is called <i>H. elatum</i> in the gardens. Pursh synonymes <i>Elatum</i> H.K.? with his <i>frondosum</i> , which it cannot be. His characters are — <i>Base of Leaves narrow, Flowers subsolitary</i> —neither of which accord with the species above described.





HYPERICUM HIRCINUM. (W.)

Stinking St. John's Wort.

<i>Flowers</i> . . .	3-gynous.
<i>Stamens</i> . . .	longer than corol.
<i>Calyx (Segments)</i>	lanceolate, acute.
<i>Leaves</i>	oblong. (W.)
<i>Subshrub</i> . . .	low, upright.
<i>Stem</i>	glab. with 2 opposite elevated lines (membranes).
— <i>Branches</i> . .	glab.
<i>Leaves</i>	opposite, sessile, subamplexicaule, ovate, lanceolate.
— <i>Margin</i> . . .	intire, joining and decurring on the membranes of the stem.
— <i>Base</i>	ovate.
— <i>Apex</i>	acute-angular.
— <i>Surface</i> . . .	yellow-green, glab.
— <i>Subface</i> . . .	concolor and with obscure punctures.
— <i>Axis</i>	prominent, glab.
— <i>Branches</i> . .	deliquescent into the veins.
<i>Corymb</i>	axillary and terminal.
<i>Peduncles & } — Pedicels }</i> . .	glab.
<i>Bracteas</i> . . .	setaceous, at base of branchings of corymb.
<i>Calyx</i>	from the thickening of the pedicel, glab. 5-fid.
— <i>Segments</i> . .	lanceolate, intire, acute.
— <i>Sinus</i>	acute.
<i>Corol</i>	5-petaled.
— <i>Petals</i>	oblong, intire, emarginate, 3-4 times the length of segments of calyx.
<i>Stamens</i>	numerous, much longer than petals, inserted round base of ovary.
<i>Pistil</i>	longer than stamens.
— <i>Ovary</i>	conic, glab.
— <i>Styles</i>	3, much longer than the ovary.
— <i>Stigmas</i> . . .	simple, small.
<i>Floration</i> . . .	10th Aug. 1821.
<i>Place</i>	Mr. James Lee's, Hammersmith.
<i>Country</i>	Sicily, Calabria, Crete.



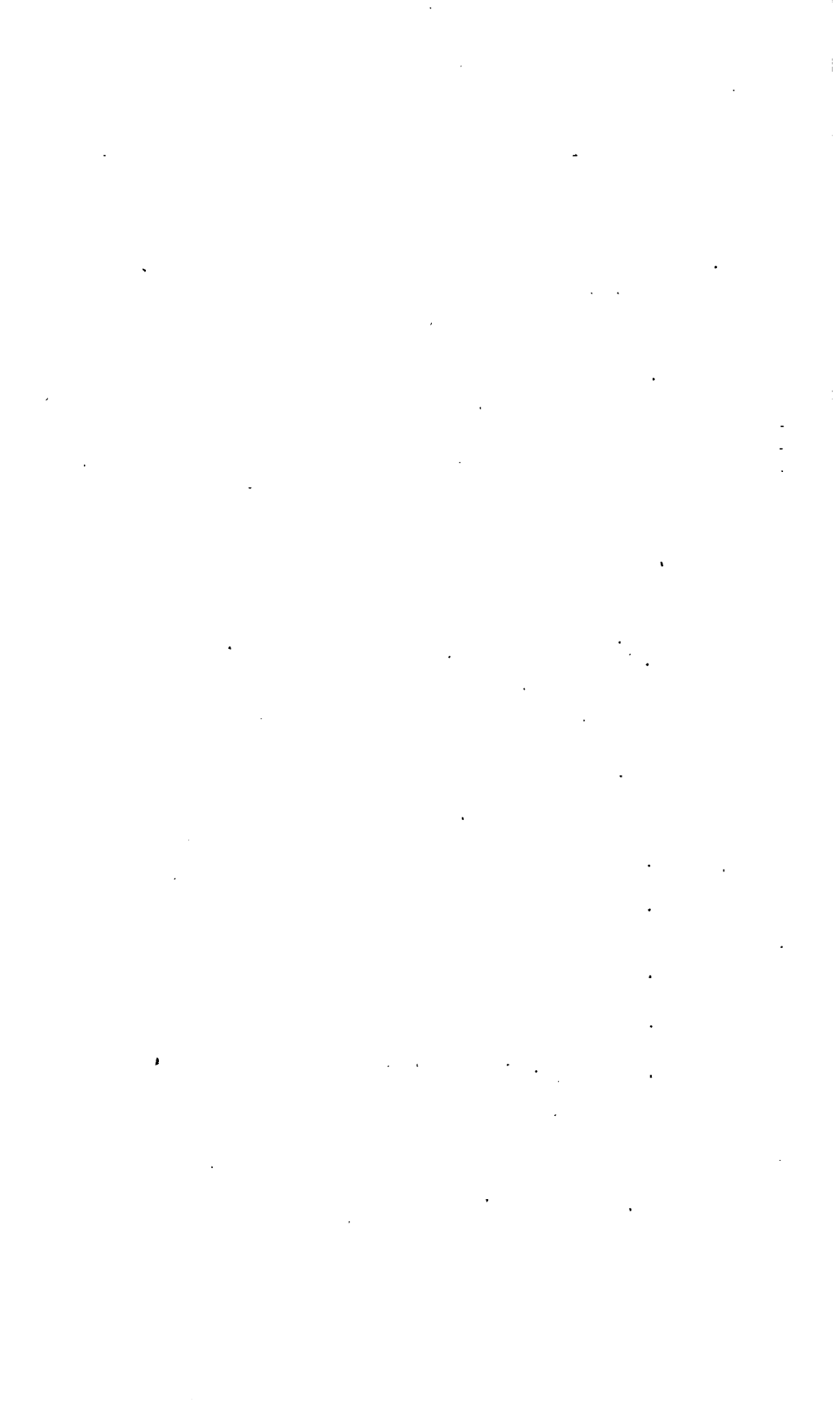




HYPERICUM HIRCINUM. v. PUMILUM. (Hortul.)

Small Stinking St. John's Wort.

Subshrub . . .	upright.
Stem . . .	brown, glab. with 2 opposite elevations running from the bases of branches.
— Shoots . . .	green, glab. with 2 similar elevations.
Leaves . . .	opposite, sessile, ovate-lanceolate.
— Margin . . .	intire.
— Base . . .	ovate.
— Apex . . .	obtuse.
— Faces . . .	glab. punctate (when viewed to the light.)
— Axis . . .	prominent, glab.
— Branches . . .	faint.
Flowers . . .	1-3, terminal.
Pedicels . . .	$\frac{1}{4}$ -inch, glab.
Calyx . . .	glab. much shorter than corol, 5-parted.
— Segments . . .	lanceolate, acute.
— Sinus . . .	angular.
— Margin . . .	intire.
Corol . . .	5-petaled, nearly = stamens.
— Petals . . .	obovate, glab. intire.
— Apex . . .	emarginate.
Stamens . . .	numerous, longer than corol, inserted round the base of ovary.
— Filaments . . .	golden, very slender, sericeous.
— Anthers . . .	round, transversed on top of filaments.
— Lobes . . .	oblong.
Pistil . . .	3-fid, = stamens.
— Ovary . . .	conic, sub 3-lirate at top, free.
— Styles . . .	3, setaceous.
— Stigmas . . .	0.
Floration . . .	13th Sept. 1821.
Place . . .	Mr. Knight's, King's Road, Chelsea.
Country . . .	South of Europe.
Dissection . . .	f. 1. calyx, 4-petaled corol, stamens and pistil. — 2. a petal. — 3. calyx, ovary, styles and stigmas.







HYPERICUM PROLIFICUM. (W.)

Prolific St. John's Wort.

<i>Corymbs</i> . . .	<i>axillary and terminal, few-flowered.</i>
<i>Flowers</i> . . .	<i>(primordial) sessile.</i>
<i>Stamens,</i> <i>Calyx, &</i> <i>Styles</i> } . . .	<i>= petals.</i>
<i>Calyx (Sepals)</i> .	<i>lanceolate.</i>
<i>Branches</i> . . .	<i>2-edged.</i>
<i>Leaves</i> . . .	<i>lanceolate-linear, subobtus. (Ph.)</i>
<i>Subshrub</i> . . .	<i>2½-3 F.</i>
<i>Stem</i> . . .	<i>pale brown, cylindric.</i>
— <i>Branches</i> . . .	<i>green, 2-edged or sub 4-angular, 1 from each axilla of leaf and 1 each side the junction.</i>
<i>Leaves</i> . . .	<i>opposite, sessile, linear-lanceolate.</i>
— <i>Margin</i> . . .	<i>intire, undulated.</i>
— <i>Base</i> . . .	<i>attenuated and meeting the opposite at a point.</i>
— <i>Apex</i> . . .	<i>obtus.</i>
— <i>Faces</i> . . .	<i>transparently punctate.</i>
— <i>Surface</i> . . .	<i>glab.</i>
— <i>Subface</i> . . .	<i>„ , paler.</i>
— <i>Axis</i> . . .	<i>„</i>
— <i>Branches</i> . . .	<i>0.</i>
<i>Inflorescence</i> . .	<i>2-chotomous, 2-3-flowered.</i>
<i>Pedicels</i> . . .	<i>glab. 1 inch.</i>
<i>Bracteas</i> . . .	<i>2, like the segments of calyx, at base of pedicels.</i>
<i>Calyx</i> . . .	<i>5-parted, in=, glab.</i>
— <i>Segments</i> . . .	<i>undulate, lanceolate, intire, acute, (larger) longer than petals.</i>
<i>Corol</i> . . .	<i>5-petaled.</i>
— <i>Petals</i> . . .	<i>suborbicular.</i>
— <i>Margins</i> . . .	<i>subundulate-crenate.</i>
<i>Stamens</i> . . .	<i>numerous, shorter than petals, inserted round the disk.</i>
<i>Disk</i> . . .	<i>(gynophore), hemispheric, alveolate above, and 5 cicatrices round the lower part.</i>
<i>Pistil</i> . . .	<i>longer than stamens.</i>
— <i>Ovary</i> . . .	<i>fusiform, glab.</i>
— <i>Style</i> . . .	<i>intire.</i>
<i>Floration</i> . . .	<i>20th Aug. 1821.</i>
<i>Place</i> . . .	<i>Mr. Knight's, King's Road, Chelsea.</i>
<i>Country</i> . . .	<i>Virginia. Canada.</i>







QUERCUS SUBER. (W.)

Cork Tree.

Leaves	ovate-oblong, undivided, serrate.
— Surface	tomentose.
Bark	rimose-fungous. (P.)
Tree	40-45 F. with suborbicular head.
Stem	12 F.
— Diameter	2½-3 F.
— Bark	corky, 2-3 inch thick!
— Branches	(main) few, crooked.
Petiole	= ¼ leaf and downy.
Leaves	alternate, elliptic-lanceolate.
— Margin	obsoletely dentate.
— Dents	very short.
— Sinus	obtuse.
— Sides	(outer) excurved, (inner) 0.
— Vertices	brown, callous.
— Base	roundish.
— Apex	acute.
— Surface	glab. shining, reticulated.
— Subface	covered with a close wool.
— Axis	elevated, } woolly.
— Branches	obsolete, }
Inflorescence	♂ and ♀ on same plant.
“	♂ ament ½ inch, clustered, few-flowered,
“	♂ “ about 1½ inch, 10-flowered, alternate,
— Peduncle (axis)	sitting on the axis.
— Pedicels	pale brown, sericeous.
♂	
Perigone (scale)	6-many-fid, in=.
— Segments	rose-color, glandular-tomentose.
— Margin	lacerated, dentate, glandular-ciliate.
Stamens	5-7, sub= scale and inserted in its centre.
— Filaments	very short, (not = anthers).
— Anthers	globular, glab. basifixt.
— Lobes	united and laterally grooved.
♂	
Scale	lacerated into many in = incisures, green and pink,
Stamens	tomentose, ciliate.
— Filaments	5, shorter than the scale, surrounding base of styles.
— Filaments	very short.

— Anthers.	
— Lobes . . .	adhering, oblong, grooved.
— Styles . . .	2-3, hairy, short, flat.
Pistil.	
— Stigmas . . .	continuations of the styles, flat, hairy, exserted, brown.
Gland (acorn) . . .	elliptic, glab. 1 protruded from the cup.
Cupule . . .	1 elliptic, densely imbricated with scales.
— Scales . . .	lanceolate covered with a thick wool.
Floration . . .	♂ June.
Place . . .	Messrs. Whitley and Co's., Fulham.
Country . . .	South of Europe.
Dissection . . .	<p>♂</p> <p>f. 1. ament.</p> <p>—2. corol within, with the 5 stamens.</p> <p>♀</p> <p>—3. ament.</p> <p>—4. flower.</p> <p>—5. gland.</p>
Observation.	The bark of this tree is the cork (corkwood) of commerce; it is otherwise closely allied to <i>Q. Ilex</i> , and the leaves of both vary exceedingly in the margin, and are even often quite entire.





QUERCUS ILEX. (W.)

Evergreen Oak.

<i>Leaves</i>	<i>ovate, oblong, undivided and serrate.</i>
— <i>Surface</i> . . .	<i>hoary.</i>
<i>Bark</i>	<i>intire.</i>
<i>Nut</i>	<i>ovate. (P.)</i>
<hr/>	
<i>Tree</i>	<i>40-45 F.</i>
— <i>Stem.</i>	
— <i>Bark</i> . . .	<i>crackt (not corky!)</i>
— <i>Branches</i> .	<i>(main) rather erect.</i>
— " . . .	<i>(lower) pendant.</i>
— <i>Branchlets</i>	<i>dark brown, covered with short hairs.</i>
<hr/>	
<i>Petiole</i>	<i>very short, cottony.</i>
<hr/>	
<i>Leaves</i>	<i>alternate, elliptic.</i>
— <i>Margin</i> . . .	<i>increnate-spinose.</i>
— <i>Crenatures</i> .	<i>subremote.</i>
— <i>Sinus</i> . . .	<i>obtuse.</i>
— <i>Sides</i> . . .	<i>both incurved.</i>
— <i>Vertices</i> .	<i>with long, yellow spines, = length of crenatures.</i>
— <i>Base</i> . . .	<i>ovate.</i>
— <i>Apex</i> . . .	<i>acute.</i>
— <i>Surface</i> . .	<i>glab.</i>
— <i>Subface</i> . .	<i>covered with a dense cotton.</i>
— <i>Axis &</i> }	<i>rather prominent and cottony.</i>
— <i>Branches</i> }	
<hr/>	
<i>Inflorescence</i> . .	<i>♂ ament, about 20-flowered.</i>
— " . . .	<i>♀ spicate, about 4-flowered.</i>
<i>Peduncle (axis)</i> .	<i>♂ 1½ inch, slender, long-white haired.</i>
<hr/>	
♂	
<i>Perigone (scale)</i> .	<i>membranous, tomentose, 6-8-fld.</i>
— <i>Segments</i> . .	<i>in =.</i>
— <i>Margin</i> . . .	<i>lacinate-tomentose.</i>
<i>Stamens</i>	<i>7-10, rather longer than the scale, and inserted in its centre.</i>
— <i>Filaments</i> . .	<i>shorter than the anthers.</i>
— <i>Anthers</i> . . .	<i>yellow, cordate-oblong, glab. basifixt.</i>
— <i>Lobes</i> . . .	<i>adnate the whole length, oblong, grooved at sides.</i>
<hr/>	
♀	
<i>Gland (acorn)</i> . .	<i>elliptic, glab. † sunk in the cupule.</i>
<i>Cupule</i>	<i>hemispheric, densely imbricated with scales.</i>

— Scales . . .	lanceolate, closely tomentose.
— Tips . . .	brownish.
Floration . . .	♂ June, ♀ August.
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	South of Europe.
Dissection . .	♂ f. 1. ament. —2. corol within with the 7 stamens. —3. ♀ on a spiked axis.





QUERCUS COCCIFERA. (W.)

Kermes Oak.

<i>Leaves</i>	<i>oblong, undivided, spinose-dentate.</i>
— <i>Base</i>	<i>cordate.</i>
— <i>Faces</i>	<i>glab.</i>
<i>Cup (Scales)</i> . .	<i>spreading. (W.)</i>
<i>Shrub</i>	<i>upright, bushy, 8-10 F.</i>
<i>Branches</i>	<i>pale-brown, glab.</i>
<i>Leaves</i>	<i>stiff, coriaceous, alternate, subelliptic.</i>
— <i>Margin</i>	<i>cartilaginous, spinose-dentate.</i>
— <i>Dents</i>	<i>obtuse-angular, short.</i>
— <i>Sinus</i>	<i>very obtuse.</i>
— <i>Sides</i>	<i>exterior (in some) incurved.</i>
— <i>Vertices</i> . . .	<i>tip with a longish, brown prickle.</i>
— <i>Base</i>	<i>slightly emarginate on each side the axis.</i>
— <i>Apex</i>	<i>obtuse-angular.</i>
— <i>Surface</i> . . .	<i>glab.</i>
— <i>Subface</i> . . .	<i>„ paler, smooth, divided into minute areoles.</i>
— <i>Axis</i>	<i>rather obsolete.</i>
— <i>Branches</i> . .	<i>scarcely apparent.</i>
<i>Inflorescence</i> . .	<i>♂ ament, 1½ inch, 7-10-flowered, sessile, alternate on the branchlets.</i>
„	<i>♀ 1-2-flowered, sessile on an axillary peduncle.</i>
♂	
<i>Scale</i>	<i>in =, 5-7-fid.</i>
— <i>Segments</i> . . .	<i>jagged, tomentose.</i>
<i>Stamens</i>	<i>6, rather longer than the scale.</i>
— <i>Filaments</i> . . .	<i>scarcely apparent.</i>
— <i>Anthers</i> . . .	<i>oblong, glab.</i>
— <i>Lobes</i>	<i>adnate their whole length, grooved at sides.</i>
♀	
<i>Bracteas</i>	<i>2, small, at base of each flower.</i>
<i>Calyx</i>	<i>1 sepalous (gamosepalous).</i>
— <i>Margin</i>	<i>dentate.</i>
<i>Corol</i>	<i>membranous, dentate, ventricose.</i>
<i>Pistil.</i>	
— <i>Stigmas</i> . . .	<i>3-4, flat, grooved, dilated upwards.</i>
— <i>Apices</i> . . .	<i>emarginate.</i>
<i>Gland (acorn)</i> . .	<i>hid in the cup.</i>

Cupule	densely imbricate with scales.
— Scales	sericeous, lanceolate, acute.
— Apices	reddish, fleshy.
Floration	20th May. (Fruit, June.)
Place	Mr. James Lee's, Hammersmith.
Country	South of Europe, Orient, Judea.
Dissection	<p>♂</p> <p>f. 1. ament.</p> <p>—2. calyx (scale).</p> <p>—3. the 5 stamens taken from the centre of the calyx.</p> <p>—4. an anther.</p> <p>♀</p> <p>—5. ament.</p> <p>—6. flower.</p> <p>—7. cupules inclosing the glands.</p>





QUERCUS CERRIS. (W.)

Turkey Oak.

Leaves	oblong, pinnatifid-sinuate.
— Lobes	oblong-lanceolate, dentate.
— Base	narrow.
— Surface	hairy.
Cup	(♀) echinate, hemispheric. (W.)
Tree	80 F.
— Trunk	8 F.
— Diameter	3-3½ F.
— Branches	(principal) rather erect.
— "	(lower) pendant to the ground.
— Expansion	70-80 feet!
— Bark	subglab. pale brown.
— Shoots	covered with adpressed, short hairs.
Petiole	¾ inch, covered with short, black hairs.
Leaves	alternate, oblong, sinuate.
— Section	½-¾.
— Sinus	obtuse.
— Sides	subexcurred.
— Lobes	obtuse-angular, rarely dentate.
— Dents	small.
— Sinus	obtuse.
— Sides	(exterior) excurred, (interior) sub 0.
— Vertices	(of lobes and dents) subindurated (not mucronate).
— Base	ovate or obtuse-angular.
— Apex	acute-angular.
— Surface	dark green, strewn with minute, star-like points.
— Surface	paler, shortly tomentose.
— Axis & }	laterally " .
— Branches }	
Inflorescence	♂ ament, 16-20-flowered, alternating on the slender axis.
"	♀ 3-7-flowered, axillary, sessile, verticillate.
♂	
Perigone	in =, 3-5-fid. coriaceous, sericeous.
— Segments	obtuse, rather lacerated.
Stamens	4, from a point in the centre of the perigone.
— Filaments	short, = anthers.
— Anthers	basifixt, elliptic, grooved each side, sericeous.
♀	
Involute	3-4-phyllous.

—Phylla	filiform, acute, sericeous.
Calyx	membranous, sericeous, lacerate.
Pistil.	
— Stigmas . . .	3, excurved.
Cupule	densely covered with scales.
— Scales	very long, subulate, sericeous, with variously curled apices.
Gland (acorn) . .	oval, glab. glossy, 3ds sunk in the cup.
Floration	May. (Fruit, 3d Sept. 1821.)
Place	Arboretum, Kew.
Country	France, Hungary.
Dissection	<div>♂</div> <div>f. 1. ament.</div> <div>—2. flower, shewing the 6 stamens.</div> <div>♀</div> <div>—3. cluster of glands in the cupules.</div> <div>—4. a gland.</div>





QUERCUS CERRIS. V. DENTATA.

Toothed-leaved Turkey Oak (Fulham Oak. Hortul.)

<i>Leaves</i>	<i>ovate-elliptic.</i>
— <i>Margin</i>	<i>largely dentate (not lobed).</i>
— <i>Base</i>	<i>broad.</i>
<i>Cupule</i>	<i>imbricated with awled, curled-tipt, sericeous scales.</i> (P. W. W.)
<i>Tree</i>	60 F. with an oval, tufted head.
— <i>Trunk</i>	10 F.
— <i>Diameter</i>	2½ F.
— <i>Bark</i>	divaricately crackt into large areas.
— <i>Branches</i>	(principal) rather erect, densely rebranched.
— "	(lower) pendant.
— <i>Branchlets</i>	glab. pale-brown.
— <i>Shoots</i>	sericeous.
<i>Petiole</i>	short, sericeous.
<i>Leaves</i>	<i>alternate, ovate-elliptic.</i>
— <i>Margin</i>	<i>largely dentate!</i>
— <i>Dents</i>	<i>obtuse-angular.</i>
— <i>Sinus</i>	"
— <i>Sides</i>	<i>excurved.</i>
— <i>Vertices</i>	<i>shortly mucronate.</i>
— <i>Base</i>	<i>broadier, with a small sinus each side the axis.</i>
— <i>Apex</i>	<i>obtuse-angular.</i>
— <i>Surface</i>	<i>glab. dark-shining-green.</i>
— <i>Subface</i>	<i>paler, covered with short wool.</i>
— <i>Axis</i>	<i>prominent, shortly sericeous.</i>
— <i>Branches</i>	<i>sub " , subsericeous.</i>
— <i>Veins</i>	<i>anastomosing.</i>
<i>Inflorescence</i>	♂ ament, 2 inch, with many sessile flowers.
"	♀ 1-2-flowered, sessile.
♂	
<i>Perigone</i>	<i>membranous, brown.</i>
— <i>Segments</i>	<i>6, obtuse.</i>
— <i>Margin</i>	<i>hairy.</i>
<i>Stamens</i>	<i>5, united in the centre of the perigone and = to it.</i>
— <i>Filaments</i>	<i>very short.</i>
— <i>Anthers</i>	<i>suborbicular, medifixt.</i>
— <i>Lobes</i>	<i>adnate, grooved.</i>
♀	
<i>Cupule</i>	<i>hemispheric, closely imbricated with scales.</i>
— <i>Scales</i>	<i>½ inch, flat, awled, sericeous, curled at apices.</i>

Gland (acorn) . .	glab. elliptic, shining, crowned by the persisting pistil, substrate and a little flattened at apex, $\frac{1}{2}$ hid in the cupule.
Floration . . .	June. (Fruit, 28th Sept. 1821.)
Place	Messrs. Whitley and Co's., Fulham.
Country . . .	?
Dissection . . .	<p>f. 1. ♂ ament.</p> <p>—2. flower to shew the scale and 5 stamens.</p> <p>♀</p> <p>—3. flowers.</p> <p>—4. cluster of glands in their cupules.</p> <p>—5. a gland.</p>





BETULA ALBA. v. PONTICA. (Hortul.)¹*Turkey Birch.*

Petiole	<i>pubescent.</i>
Leaves	<i>rhomboid, subincised-dentate.</i>
— Margin (Dents)	<i>obtuse-angular.</i>
— Surface	<i>glab.</i>
— Axis and } . .	<i>few-haired.</i>
— Branches }	
— $\angle s$	<i>with small hair tufts. (P.W.W.)</i>
Tree	10-12 F.
Epidermis	white, foliaceous.
Branches	dark-brown, glab.
— Shoots	pubescent.
Petiole	= $\frac{1}{3}$ leaf, pubescent.
Leaves	in alternate pairs at base of peduncle but opposite each other, rhomboid, incised, inequally serrate.
— Section	shallow.
— Lobes	sub 2-serrate.
— Serratures	obtuse-angular.
— Sinus	acute.
— Sides	excurved.
— Vertices	rather blunt.
— Base	obtuse-angular ! intire.
— Apex	acuminate.
— Surface	dark green, glab.
— Subface	olive-green, „ .
— Axis	prominent, finely haired.
— Branches	fainter, few haired.
— $\angle s$	with small hair-tufts.
Inflorescence. . .	σ ament $2\frac{1}{2}$ inch, slender, pendant.
„	φ solitary, oblong-cylindric, closely imbricate with scales.
Scales σ	3, subciliate, top one shield-like, rhomboid, with 2 others close under it and fixed to the pedicel.
Flower	one, 3-petaled (parted).
Stamens	united in a bundle in the centre of the flower.
— Filaments	short.
— Anthers	elliptic, basifixt, didymous.
Scale φ	(<i>Florification.</i>)
Flowers	3-lobed, mid-one larger, obtuse with ciliated margins.
Pistil	3 to each scale.
— Ovary	ovate, winged.
— Styles	2, purple.
Scales	(<i>Fructification.</i>)
	in opposite threes (spirally ?) round the axis.

— Segments . . .	(lateral) obtuse.
” . . .	(terminal or mid-one) subobtuse.
” . . .	” Margin ciliate.
” . . .	” Base . . cuneate, = lobes.
Samara.	
— Pericarp . . .	compressed, lanceolate, glab. 2-celled, 1-seeded, crowned by 2 styles.
— Wing . . .	transparent, periphery cordate, higher than pericarp, truncate at base.
— Margin . . .	undulate.
Floration . . .	♂ April. ♀ May. (Fruit, Sept.)
Place	Mr. Jenkins's Botanic Garden, New Road.
Country	Turkey.
Dissection . . .	♂
	f. 1. ament.
	— 2. flower.
	— 3. ” ; upper 3 scales and corol.
	— 4. a stamen.
	♀
	— 5. ament.
	— 6. scale and 3 flowers.
	— 7. ament partly denuded to shew the fixation of flowers on the axis.
	— 8. a scale.
	— 9. samara.
	— 10. ” transversely sected.
	— 11. seeds.

Observation 1.—Considered only a variety of *B. alba* by Link in his edition of Wildenow's Enumeratio, though its rhomboid (not deltoid) leaves might seem sufficient to establish it as a distinct species.

Observation 2.—The parts of the fructification of this genus are variously and often confusedly stated. Linnæus, by considering *Betula* and *Alnus* as one genus, and not recording the types from which he constructed his genera, (which would have been extremely useful to his followers, and is highly desirable of those who establish new genera), has not permitted us to follow him in the examination of this genus from a type, and he may probably have mixed the characters of *Betula* and *Alnus* in the construction of it. Jussieu, who in many cases merely abridges the Linnean characters, is not more happy in the elucidation of the genus. Gärtner, who certainly knew the parts of fructification better than any of his predecessors, generally records a plain, clear detail, as he finds them in the natural objects, without fettering himself with the observations of others, and has constructed this genus with his usual and rare perspicuity; indeed the services rendered to botanic science by this indefatigable observer are immense and highly valuable.

I have found the mutual relation of the parts much the same as he has done, and thus:

♂ From the axis of the ament arise numerous short pedicels (receptacles), crowned with a kind of shield (the top scale); under this shield are two other smaller scales fixed to the pedicel, and a little above the base under these scales is posited the 3-fid corol with the stamens in its centre. I agree with Wildenow and Hayne in considering the scale to be 1-flowered and not 3-flowered as stated by Linnæus and Jussieu, which character belongs to *Alnus*.

♀ Scales of the ament fixed spirally (?) and closely round the axis, 3-lobed, each scale bearing 3 naked flowers (without calyx or corol). Samara 2 celled, each cell 1-seeded.





BETULA EXCELSA. (W.)

Tall Birch.

Leaves	ovate, acute, serrate.
Petiole	pubescent, shorter than peduncle.
Scale of Strobile	(lateral lobes) rounded. (W.)
Tree	12-14 F. (70-80 in native country.)
Epidermis	white, foliaceous.
Branches	dark brown, glab.
— Shoots	„ , densely pubescent.
Petiole	short, 2 lines, pubescent.
Leaves	alternate, subcordate-rotund, subincised-dentate.
— Section	shallow.
— Sinus	acute.
— Lobes	very short, inequally dentate.
— Dents	short, obtuse.
— Sinus	acute.
— Sides	excurred.
— Vertices	blunt, indurated.
— Base	subcordate.
— Apex	short, acute.
— Surface	pubescent.
— Subface	„ , paler.
— Axis & } — Branches }	prominent, long-haired.
Inflorescence.	
„	♂ ament $\frac{1}{2}$ inch.
„	♀ „ solitary, axillary, oblong, spirally imbricated with scales.
— Pedicels	short, = petioles, sericeous.
Scales ♂	(upper or shield) brown, orbicular, forepart of margin strongly ciliate.
„	2 shorter underneath.
Flower	one, 3-petaled, fixed under the scales.
Stamens	several, in the centre of the flower.
— Filaments	very short.
— Anthers	orbicular, basifixt (not didymous.)
Scales ♀	(Florification.)
Flower	3-lobed, all ciliate, mid-one longest.
— Ovary	3 to each scale.
— Styles	flat, orbicular, winged.
	2, brown, recurved.

<i>(Fructification.)</i>	
Scale	3-lobed, rugose.
— Lobe	(lateral) obtuse.
— "	(terminal) subobtuse.
— Base	short.
Samara.	
— Pericarp . .	compressed, lanceolate, glab. 2-celled, crowned by persisting styles.
— Wing	membranous, = length of pericarp.
— Margin . . .	top corners obtuse.
— Base	rather dilated to an obtuse angle on each side.
— Seeds	2, elliptic.
Floration . . .	♂ May. ♀ June. (Fruit, Aug.)
Place	Mr. Jenkins's Botanic Garden, New Road.
Country	Province of Maine, Hudson's River.
Dissection . . .	<p style="text-align: center;">♂</p> <p>f. 1. ament.</p> <p>— 2. flower.</p> <p>— 3. top scale (shield).</p> <p>— 4. corol.</p> <p>— 5. stamen and anther.</p> <p style="text-align: center;">♀</p> <p>— 6. ament.</p> <p>— 7. 3-flowered scale.</p> <p>— 8. 3 scales as they are fixed on the axis.</p> <p>— 9. single scale.</p> <p>— 10. samara.</p> <p>— 11. " , transversely sected.</p> <p>— 12. seeds.</p>





— Surface . . .	5-nerved.
Pistil.	
— Ovary . . .	flat, elliptic.
— Styles . . .	2.
(Fructification.)	
Samara . . .	= scale.
— Capsule . . .	compressed, elliptic, rather tapering at ends, crowned with persisting styles.
— Wing . . .	membranous, a little longer than capsule, subtruncate at top, obtuse at corners and narrowing to the base.
— Margin . . .	intire.
— Cells . . .	2.
— Seeds . . .	1 in each cell.
Floration . . .	♂ June. ♀ July. (Fruit, Aug.)
Place . . .	Mr. James Lee's, Hammersmith.
Country . . .	Alps.
Dissection . . .	<p>♂</p> <p>f. 1. ament.</p> <p>—2. flower.</p> <p>—3. stamen.</p> <p>♀</p> <p>—4. ament, longitudinally sected.</p> <p>—5, 6. „ , transversely „ to shew the position of the scales.</p> <p>—7. samara.</p>
Observation.	<p>From the habit and inflorescence of the ♀, this plant may be considered an <i>Alnus</i>, but the fruit, being samaraus, claims it a <i>Betula</i>.</p> <p>This double character seems to destroy the distinction between <i>Betula</i> and <i>Alnus</i>, both which ought probably again to be consolidated into one genus and sectioned,</p> <p style="text-align: center;"> { * Fruit a samara. { ** „ capsule (no wings). </p>





BETULA FRUTICOSA. (W.)

Shrubby Birch.

Leaves	<i>subrotund-ovate, subequally serrate, glab.</i>
Ament	♀ <i>oblong.</i> (W.)
Shrub	4-5 F.
— Branches . . .	dark-purplish-brown, sericeous.
Petiole	short, solitary long-haired.
Leaves	alternate, subelliptic, subincised-dentate.
— Section	shallow.
— Lobes	dentate.
— Dents	obtuse-angular, in =.
— Sinus	"
— Sides	excurved.
— Vertices . . .	obtuse, naked.
— Base	round.
— Apex	obtuse-angular.
— Surface	glab. strewn with white scales.
— Subface	(parenchyma) glab.
— Axis & } . . .	prominent, long-haired.
— Branches } . . .	
— \angle s	naked.
Inflorescence . .	♂ ament $\frac{1}{4}$ inch.
"	♀ " solitary, axillary, elliptic, closely and spirally imbricate with scales.
— Pedicel	$\frac{1}{4}$ length of ament.
♂	
Flowers	1 under each scale, 3-petaled.
— Scale	(upper or shield) brown, orbicular, ciliate.
Stamens	3, one to each petal.
— Filaments . . .	very short.
— Anthers	elliptic, didymous.
♀	
(<i>Florification.</i>)	
Flowers	3 to each scale.
Scales	3-lobed, not ciliate.
— Ovary	ovate, flat, winged.
— Styles	2, brown, long.
(<i>Fructification.</i>)	
Scale	3-lobed, glab.
— Lobes	(lateral) very short, obtuse (not diverging).
"	(terminal) obtuse.
— Base	long, flat, tapered, sublinear.

Samara.	
— Pericarp . . .	flat, elliptic, 1-celled, crowned with persisting styles.
— Wings . . .	thin, membranous, = capsule.
— Margin . . .	(upper angles) . obtuse and top subtruncate. (sides) straight, rather narrowing downwards.
— Seeds . . .	(lower part) . . obtuse. 2, minute.
<hr/>	
Floration . . .	♂ May. ♀ June. (Fruit, Sept.)
<hr/>	
Place	Mr. Jenkins's Botanic Garden, New Road.
<hr/>	
Country . . .	Bavaria, Siberia.
<hr/>	
Dissection . . .	♂ f. 1. ament. — 2. flower. — 3. top scale (shield): — 4. stamen. ♀ — 5. ament. — 6. 3-flowered scale. — 7. ament, longitudinally sected. — 8. „, transversely „ . — 9. scale. — 10. samara. — 11. leaf doubled down to shew the pubescent nerves.





CARPINUS ORIENTALIS. (W.)*Eastern Hornbeam.*

Strobile.	
— <i>Scale</i> . . .	<i>ovate.</i>
— <i>Base</i> . . .	<i>in =, undivided, subangulate, inequally serrate. (W.)</i>
Tree	low, spreading, 10-12 F.
Branches . . .	brown, glab.
— Shoots . . .	long-white-haired.
Leaves	alternate, elliptic-lanceolate, incised-serrate.
— Section . . .	shallow.
— Lobes . . .	acute.
— Margin . . .	inequally dentate.
— Dents . . .	obtuse-angular.
— Sinus . . .	"
— Sides . . .	excurved and bowform.
— Vertices . . .	acuminate, incrassated.
— Base . . .	obtuse-angular.
— Apex . . .	acute- " .
— Surface . . .	glab.
— Subface . . .	(parenchyma) with solitary white hairs.
— Axis . . .	prominent, long white-haired.
— Branches . . .	" , parallel and " .
— ∠s . . .	long, white-haired.
Inflorescence . .	♂ ament $\frac{1}{2}$ inch, sessile, from a 4-scaled involucre.
" . . .	♀ " 1 inch, sessile, axillary.
Scale ♂	1, ovate-lanceolate, concave, fringed.
Stamens	numerous, inserted at base of scale.
— Anthers . . .	didymous, oblong, hairy at apex.
Scales ♀	(<i>Florification.</i>)
"	(1 outer) red, lanceolate, hairy.
"	(2 inner) very hairy, lanceolate, dentate-serrate, each bearing 1 flower and 1 ovary.
Pistil	longer than scales.
— Ovary	in a tuft of hairs.
— Styles	2, long, subfusiform, pubescent.
— Stigmas . . .	continuations of styles, very slender, hairy, long-pointed.
Scales	(<i>Fructification.</i>)
— One Side . . .	(upper) largest, sessile, ovate, inequally lanceolate.
— Dents . . .	broad, incised-dentate.
	acute and acuminate.

— Sinus . .	angular.
— Sides . .	excurved.
— Apices . .	acute.
— Margin . . .	ciliate.
— Surface . . .	glab. rugose.
— Subface . . .	(parenchyma) glab. base pubescent.
— Nerves . . .	8, from base, joined by veiny reticulations and long-haired.
Nut (Carcerule) .	orbicular, inferior, 1-seeded.
Floration . . .	♂ May. ♀ June. (Fruit, Sept.)
Place	Arboretum, Kew.
Country . . .	Carniola. Sclavonia, &c.
Dissection . . .	<p>♂</p> <p>f. 1. ament.</p> <p>—2. flower.</p> <p>—3. stamen.</p> <p>♀</p> <p>—4. ament.</p> <p>—5. 2-flowered scale.</p> <p>—6. ament grown to the fruiting state.</p> <p>—7. scale and 1 nut.</p> <p>—8. nut.</p> <p>—9. „ , transversely sected.</p>



CORYLUS COLUMNNA. (W.)

Constantinople Nut-Tree.

<i>Calyx of Fruit</i> . . .	<i>double.</i>
„ (<i>exterior</i>) . . .	<i>multiparted.</i>
„ (<i>interior</i>) . . .	<i>3-parted.</i>
— <i>Segments</i> . . .	<i>palmate.</i>
<i>Leaves</i>	<i>subrotund-ovate, cordate.</i>
<i>Stipules</i>	<i>lanceolate, acuminate. (W.)</i>
<i>Tree</i>	<i>20 F.</i>
— <i>Branches</i> . . .	<i>pale-brown with chain-like elevations.</i>
<i>Petiole</i>	<i>long, = $\frac{1}{2}$ length of leaf, cylindric, glab.</i>
<i>Leaves</i>	<i>alternate, cordate-elliptic, incised-serrate.</i>
— <i>Section</i>	<i>shallow.</i>
— <i>Sinus</i>	<i>acute.</i>
— <i>Lobes</i>	<i>inequally denticulate.</i>
— <i>Denticles</i> . . .	<i>obtuse-angular.</i>
— <i>Sinus</i>	<i>acute.</i>
— <i>Sides</i>	<i>excurved, bowform on the larger.</i>
— <i>Vertices</i> . . .	<i>naked.</i>
— <i>Base</i>	<i>cordate.</i>
— <i>Apex</i>	<i>short-acuminate.</i>
— <i>Surface</i>	<i>subhirsute.</i>
— <i>Subface</i>	<i>(parenchyma) glab.</i>
— <i>Axis & Branches</i> }	<i>prominent, with a few horizontal hairs on the sides.</i>
<i>Inflorescence</i> . .	<i>♂ aments about 4, from different points on the terminal shoots, $1\frac{1}{2}$ inch, cylindric, densely imbricated on the axis with numerous single sessile flowers.</i>
<i>Scale (Perigone)</i> .	<i>(viewed from without) sericeous, subrhomboid, thicker upwards, intire! (not 3-parted) ending with a brown point (mucrone).</i>
<i>Corol</i>	<i>0.</i>
<i>Stamens</i>	<i>8, under the scale and fixed in its centre.</i>
— <i>Filaments</i> . . .	<i>very short (sub 0).</i>
— <i>Anthers</i>	<i>reddish, elliptic, large, = scale and occupying its whole inferior face.</i>
— <i>Lobes</i>	<i>adnate.</i>
<i>Involucre</i>	<i>fixed at base of glomeration of nuts, rather than an exterior calyx to each nut.</i>

— Segments . . .	linear intire, (or again divided), long, acuminate, grooved, glab. shining, villous at points.
Calyx	glab. coarctate, inclosing the nut, and twice its length, divided into numerous segments.
— Segments . . .	linear, intire, long-acuminate, lirate and lirate-sulcate, villous.
— Margin . . .	villous and gland-villous.
Nuts (Nucules) .	3 on each peduncle, divaricate, compressed, rather pointed.
— Base	rasped.
Floration	♂ 21st Dec. 1822. (Fruit, Aug. 1821.)
Place	Mrs. Simpson's (late Mr. Ord's), Walham Green.
Country	Byzantium.
Dissection . . .	♂ f. 1. bunch of aments. —2. subface of scale bearing the 8 stamens. —3. surface of scale. —4. an anther separated. —5. nut.
<i>Observation.</i>	I am sorry I could not obtain the ♀ flower.





PLATANUS OCCIDENTALIS. (W.)

American Plane Tree.

<i>Leaves</i>	5-angular, obsoletely lobate, dentate.
— <i>Base</i>	cuneate.
— <i>Subface</i> . . .	pubescent. (W.)
<i>Tree</i>	80-100 F. with subglobular head.
<i>Stem</i>	20 F.
— <i>Diameter</i> . . .	2½ F.
— <i>Bark</i>	reddish-pale-brown, crackt and shelly.
— <i>Branches</i> . . .	divaricated, (lower) spreading horizontally, red-brown, glab. warty.
<i>Petiole</i>	=½ length of leaf, cylindric, glomerate-pubescent.
<i>Leaves</i>	3-4, from the terminations of the branchlets, truncate-3-lobed.
— <i>Section</i>	½.
— <i>Sinus</i>	obtuse.
— <i>Sides</i>	slightly excurved.
— <i>Lobes</i>	3 large and 2 smaller, acuminate, paucidentate.
— <i>Dents</i>	very short.
— <i>Vertices</i> . . .	longish, indurated.
— <i>Base</i>	subtruncate, with a slight sinus each side the axis.
— <i>Apex</i>	acuminate.
— <i>Surface</i>	glab. stellate-pubescent on the nerves and parts near them.
— <i>Subface</i>	glab.
— <i>Nerves</i>	pubescent, 3, from a point at base of leaves, prominent.
— <i>Branches</i> . . .	„ fainter.
— <i>∠s</i>	„ .
<i>Inflorescence</i> . {	♂ and } globular, alternating on the axis, the numerous florets, mixed with scales covering the whole orbicular receptacle.
♀ ament,	
<i>Scales</i> ♂	1-flowered, spongy.
<i>Stamens</i>	1 to each scale, rather tapering.
— <i>Anthers</i>	oblong, yellow, adnate to sides of filaments! from the top downwards.
<i>Scales</i> ♀	1-flowered, glab. truncate, of spongy consistence.
<i>Pistil</i>	
— <i>Ovaries</i>	roundish.
— <i>Base</i>	pubescent.
— <i>Style</i>	glab. filiform, ascending, revolute.
— <i>Stigma</i>	continuous with the style and curled in at apex.
<i>Seeds</i> (Carcerales)	naked, from a hairy base.

Floration . . .	June. (Fruit. 1822.)
Place	Physic Garden, Chelsea.
Country . . .	Canada to Florida. Louisiana.
Dissection . . .	<p>♂</p> <p>f. 1. aments.</p> <p>—2. stamen and scale as fixed on the periphery of the globular receptacle.</p> <p>♀</p> <p>—3. ament, transversely sected to shew the position of the flowers on the globular receptacle.</p> <p>—4. flower and scale.</p> <p>—5. ament at maturity.</p> <p>—6. „ , transversely sected, shewing the position of the seeds.</p> <p>—7. a seed (carcerule) with its hair-tufted base.</p> <p>—8. „ , longitudinally sected.</p>
Observation.	<p>The characters of this genus have been variously stated and as variously understood. The parts have generally been considered of difficult structure.</p> <p>“Partes florum examinent attentiori oculo lincei.” (Schreb. genera.)</p> <p>Linnaeus speaks of scales and petals. Jussieu mentions scales only. Gärtner states merely scales. I could never perceive any thing like a corol in either sex as Linnaeus, Schreber and others have done, and I consider the characters of Gärtner as the truest and clearest, viz. that the globular receptacles are densely covered with mere scales and stamens in the ♂ and scales and pistils in the ♀.</p> <p>J. Miller, who was a celebrated botanic draftsman in his day, has, in his plates to Hunter's <i>Evelyn</i>, represented the ♂ as a polysepalous, polypetalous, polystaminous flower, and the ♀ as also polysepalous and polypetalous, all which I consider supposititious.</p>





PLATANUS ORIENTALIS. (W.)

Eastern Plane Tree.

<i>Leaves</i>	<i>5-lobed-palmate.</i>
— <i>Base</i>	<i>cuneate.</i>
— <i>Segments</i>	<i>lanceolate, sinuate.</i>
<i>Stipules</i>	<i>subintire. (W.)</i>
<i>Tree</i>	60-65-70 F.
— <i>Trunk</i>	2-2½ F. diameter and 9 F. before the ramification.
— <i>Bark</i>	foliaceous, crackt, rather peeling.
— <i>Branches</i>	pale-brown, glab. divaricated, subhorizontal, (lower) hanging to the ground.
— <i>Expansion</i>	40-45 F.
<i>Petiole</i>	= ½ length of leaf, few-haired, pubescent near the base.
<i>Leaves</i>	alternate, palmate.
— <i>Section</i>	½.
— <i>Sinus</i>	obtuse, narrow.
— <i>Sides</i>	straight.
— <i>Lobes</i>	5, 3 large and 2 smaller, acuminate, paucidentate.
— <i>Dents</i>	acute, rather inhooked.
— <i>Sinus</i>	obtuse.
— <i>Sides</i>	(exterior) excurved, (interior) constituting the sinus.
— <i>Vertices</i>	indurated.
— <i>Base</i>	subcuneate.
— <i>Apex</i>	acute and acuminate.
— <i>Surface</i>	glab.
— <i>Subface</i>	„ (lower part) intertextedly pubescent.
— <i>Nerves</i>	5, from a point near the base, prominent and with fainter branches.
— <i>Sides and</i> } <i>∠s</i> }	strewed with intertexted pubescence.
<i>Inflorescence</i>	♂ aments about 5, } globular, alternating on the
„	♀ „ about 4, } axis.
♂ <i>Stamens</i>	numerous, on a globular receptacle, single, mixed with numerous scales.
— <i>Filaments</i>	parallelopiped, green.
— <i>Anthers</i>	didymous, fixed by their whole length perpendicularly from the top of the filament down its sides!
♀ <i>Scales</i>	on the globular receptacle numerous, 1-flowered, cuneate, thick, pubescent,

Pistil.	
— Ovary . . .	pubescent.
— Styles . . .	ascending, longer than scales, and mixed with them, pubescent on one side! revolute.
— Stigma . . .	small, simple.
Seeds (Carcerules)	naked, topshaped, from a tuft of long hairs at base, crowned by the persisting pistil.
Floration . . .	June. (Fruit, Sept.)
Place	Physic Garden, Chelsea.
Country . . .	Orient.
Dissection . . .	<p>♂</p> <p>f. 1. ament.</p> <p>—2. stamen and scale.</p> <p>♀</p> <p>—3. ament, transversely sected to shew the position of the flowers on the orbicular receptacle.</p> <p>—4. flower composed of a scale and pistil.</p> <p>—5. ament at maturity.</p> <p>—6. „ , transversely sected with peripheral site of seeds.</p> <p>—7. a seed (carcerule).</p> <p>—8. „ , longitudinally sected.</p>





Sub by J. & A. Arch. Cornhill Jan'y 1884

POPULUS MONILIFERA. (W.)

Canadian Poplar.

<i>Leaves</i>	<i>subcordate, glab.</i>
— <i>Serratures</i>	<i>cartilaginous, hooked, subpilose.</i>
— <i>Base</i>	<i>glandular.</i>
— <i>Nerves</i>	<i>spreading.</i>
<i>Petiole</i>	<i>compressed.</i>
<i>Branches</i>	<i>cylindric ! (W.)</i>
<i>Tree</i>	100-120 F.
— <i>Stem</i>	30 F.
— <i>Diameter</i>	2½ F.
— <i>Bark</i>	longitudinally and transversely crackt into areoles.
— <i>Branches</i>	at an \angle of 45, rather excurved, brown, glab.
— <i>Branchlets</i>	warty, cylindric ! white-haired, subangular ! pale olive-color, glab.
<i>Petiole</i>	longer than the leaf, glab. flatted near the base of leaf and 2-glanded.
<i>Leaves</i>	alternate, subcordate-deltoid.
— <i>Margin</i>	(of junior leaves) cartilaginous, diaphanous, hooked serrate, ciliate !
— <i>Serratures</i>	close (not remote).
— <i>Sinus</i>	very obtuse.
— <i>Sides</i>	(exterior) strongly excurved.
— <i>Vertices</i>	blunt, fleshy.
— <i>Base</i>	slightly cordate.
— <i>Apex</i>	acute-angular, intire.
— <i>Surface</i>	glab. closely strewed with round, white specks.
— <i>Subface</i>	„ , with pale spots.
— <i>Axis</i>	„ , prominent.
— <i>Branches</i>	„ , vanishing.
<i>Inflorescence</i>	♂ ament about 30 flowered, alternate on short pedicels.
— <i>Axis</i>	♀ „ „ 40 „ „ 6 inches, glab. slender.
— <i>Pedicels</i>	very short, „ , open (not crowded).
♂ <i>Scale</i>	glab. ! jagged and brown-tipt.
<i>Corol</i>	cupform, glab.
— <i>Margin</i>	crenate (repand).
<i>Stamens</i>	16, a little longer than the corol and in its centre.
— <i>Anthers</i>	oblong, adnate, basifixt.
— <i>Lobes</i>	grooved.

Scale ♀	brown, glab. veined, upper part long-fine-lacera- jagged.
Corol	flat, cup-shaped.
— Margin . . .	repand.
Pistil.	
— Ovary . . .	round, a little tapering at apex, rather furrowed.
— Style . . .	0.
— Stigma . . .	4-parted.
— Segments .	dilated, jagged.
Floration . . .	March. (Fruit, 13th May, 1822.)
Place	Arboretum, Kew.
Country . . .	North America.
Dissection . . .	f. 1. cylindric branchlet. ♂ —2. flower and its scale, corol and stamens. —3. stamen. ♀ —4. ament. —5. flower and its scale, corol, ovary and stigma. —6. capsule opened. —7. poppused seed.
Observation.	A considerable uncertainty prevails as to the identity of this species, and the synonymes respecting it are extremely confused; most writers, however, have referred to the plant at Kew (from which my description and drawing are made) as the original subject under their respective considerations. The plant at Kew is the ♀, the delineation of the ♂ is taken from the flower of a large tree (90-100 F.) at Cottingham, 5 miles from Hull, the village where I have resided these 24 years. I consider it fortunate that in the same hedge, by the road side, both the sexes are found, and several other fine specimens of equal height are dispersed in the grounds behind. The place is the property of John Travis, Esq.; but though I have repeatedly inquired, I could never discover whence the trees were originally procured. The ♀ plant is by far the rarest, and I have only seen two, the one here delineated and that alluded to at Cottingham. Wildenow says he had only seen the ♂.





CORIARIA MYRTIFOLIA. (W.)

Myrtle-leaved Coriaria.

Leaves	<i>ovate-lanceolate, 3-nerved, petiolate. (W.)</i>
Shrub	low, bushy.
Stem	green, glab. warty, angular.
— Branches	opposite.
Petiole	very short.
Leaves	pinnatoid, opposite, sessile, ovate, lanceolate.
— Margin	intire.
— Base	ovate.
— Apex	acuminate, with a black indurated point.
— Faces	glab.
— Axis	prominent.
— Branches	obliterated.
Inflorescence.	
Raceme	terminal on the shoots.
— Peduncles & } — Pedicels	herbaceous, glab.
Bracteas	opposite, at base of each pedicel, lanceolate, intire, acute.
Calyx	5-sepaled.
— Sepals	obtusely angular.
Corol	5-petaled.
Stamens	5, shorter than calyx and inserted between it and petals.
— Filaments	= anthers.
— Anthers	elliptic, basifixt, connate.
Pistils.	
— Ovaries	5, united.
— Styles	5, red, villous, long, fusiform, with bent points.
Floration	12th June, 1821.
Place	Arboretum, Kew.
Country	South of France. Spain.







AILANTHUS GLANDULOSA. ♂ (W.)

Chinese Ailanthus.

<i>Leaves</i>	<i>impair-pinnate.</i>
<i>Leaflets</i>	<i>dentate at base.</i>
— <i>Dents</i>	<i>glandular. (W.)</i>
<i>Tree</i>	60-65 F. with a round, tufty head.
— <i>Trunk</i>	12-14 F.
— <i>Diameter</i>	3½ F.
— <i>Bark</i>	rather rough (not crackt).
— <i>Branches</i>	numerous, suberect, (smaller) divaricated.
<i>Petiole</i>	(common) reddish, short-haired.
“	(foliolar) short, subpubescent.
<i>Leaves</i>	alternate, impair-pinnate.
— <i>Leaflets</i>	7½ pair, cordate-ovate-lanceolatè.
— <i>Margin</i>	in=, shortly and largely dentate.
— <i>Dents</i>	very short, broad, in= and larger near the base.
— <i>Sides</i>	(exterior) excurved.
— <i>Vertices</i>	obtuse.
— <i>Base</i>	subcordate.
— <i>Apex</i>	acuminate.
— <i>Faces</i>	glab.
— <i>Subface</i>	paler.
— <i>Axis</i>	prominent, finely haired on each side.
— <i>Branches</i>	altertnate, forked near the margin.
<i>Racemes</i>	about six from a point, terminal, compound.
<i>Peduncle</i>	herbaceous, glab.
— <i>Pedicels</i>	“ “ , short, thicker upwards.
<i>Calyx</i>	short, campanulate, 5-fid, covered with little, pale papillas.
— <i>Segments</i>	lanceolate, acute.
— <i>Sinus</i>	obtuse-angular.
— <i>Sides</i>	intire.
<i>Corol</i>	herbaceous, much longer than the calyx, 5-petaled.
— <i>Petals</i>	concave, inserted under the disk and alternating with segments of calyx.
— <i>Base</i>	pubescent, involute.
<i>Stamens</i>	10, rather longer than petals, 5 inserted on the outer edge of disk and alternating with the petals, and 5 lower inclosed in the grooves at bases of claws.
— <i>Filaments</i>	slender, tapering, pubescent at base.
— <i>Anthers</i>	oblong, medifixt.

— Lobes . . .	„ , grooved.
Disk	small, orbicular, pubescent, 5-lobed-radiate.
Floration . . .	11th July, 1822.
Place	Arboretum, Kew.
Country . . .	China.
Dissection . . .	f. 1. flower seen from above with the stamens inserted on the edge of the disk. —2. a pinnated leaf reduced, to shew all the leaflets.





CELTIS AUSTRALIS. ♂. (W.)

European Nettle Tree.

<i>Leaves</i>	<i>oblong, lanceolate, acuminate, sharply serrate.</i>
— <i>Base</i>	<i>in=.</i>
— <i>Surface</i>	<i>scabrous.</i>
— <i>Subface</i>	<i>soft, pubescent. (W.)</i>
<i>Shrub</i>	<i>spreading, 12-14 F.</i>
— <i>Branches</i>	<i>pale-brown, glab, warty.</i>
— <i>Shoots</i>	<i>green, white-haired.</i>
<i>Petiole</i>	$\frac{1}{4}$ inch, and long, spreading white-haired.
<i>Leaves</i>	with a ruddy bud in each axis! alternate, ovate-lanceolate.
— <i>Margin</i>	inequally dentate and subdentate.
— <i>Dents</i>	obtuse-angled.
— <i>Sinus</i>	in=, obtuse.
— <i>Sides</i>	(on the lower dents) excurved.
— <i>Vertices</i>	thickly incrassated.
— <i>Base</i>	subin=, ovate.
— <i>Apex</i>	very long-acuminate.
— <i>Surface</i>	dark-green, strewed with short, white hairs (not hispid).
— <i>Subface</i>	rugged from the anastomation of nerves and veins.
— <i>Nerves</i>	long-white-haired (the 3 principal) from base of leaf.
— <i>Branches</i>	" " " "
<i>Inflorescence</i>	in solitary, axillary flowers.
— <i>Pedicels</i>	$\frac{1}{2}$ inch, glab.
<i>Perigone</i>	5-fid.
— <i>Segments</i>	oblong.
— <i>Apices</i>	scariose, lacerate-ciliate.
<i>Stamens</i>	6, rather shorter than perigone, and inserted on it under the ovary.
— <i>Filaments</i>	= anthers.
— <i>Base</i>	pubescent.
— <i>Anthers</i>	medifixt, subcordate.
<i>Pistil.</i>	
— <i>Ovary</i>	orbicular.
— <i>Style</i>	0.
— <i>Stigmas</i>	2, long, pubescent.
<i>Drupe</i>	green, glab. 1-celled.
— <i>Kernel</i>	white.
<i>Floration</i>	Spring. (Fruit, Sept. 1821.)

Place	Arboretum, Kew.
Country	South of Europe.
Dissection	f. 1. calyx. —2. the 6 stamens. —3. a stamen separated. —4. ovary and stigma. —5. drupe, transversely sected. —6. dentation of leaves.





PLANERA CARPINIFOLIA. (P. W. W.)

Hornbeam-leaved Planera.

<i>Leaves</i>	<i>subsessile, oblong-oval, crenate-dentate.</i>
— <i>Base</i>	<i>emarginate.</i>
<i>Capsule</i>	<i>smooth. (Mich. sub. Rich.)</i>
<i>Tree</i>	40-45 F. with hemispheric head.
— <i>Stem</i>	5 F.
— <i>Diameter</i>	2 F.
— <i>Bark</i>	rather shelly.
— <i>Branches</i>	brown, glab. warty.
— "	(large lower) horizontal.
— <i>Branchlets</i>	white-haired.
<i>Petiole</i>	very short, white-haired.
<i>Leaves</i>	alternate, elliptic.
— <i>Margin</i>	dentate.
— <i>Dents</i>	large, obtuse-angular, ciliate.
— <i>Sinus</i>	acute-angular.
— <i>Sides</i>	excurved.
— <i>Vertices</i>	naked.
— <i>Base</i>	irregular, one side lower and rather rounded.
— <i>Apex</i>	subobtus.
— <i>Nervation</i>	prominent, pubescent.
<i>Inflorescence</i>	axillary, sessile, 1-flowered, ♂ and ♀ on same branches.
♂	
<i>Perigone</i>	membranous, brown, 4-fid.
<i>Stamens</i>	5, in the centre of the perigone.
— <i>Filaments</i>	slender, = segments of " .
— <i>Anthers</i>	orbicular, basifixt, glab.
— <i>Lobes</i>	oblong, grooved, united the whole length.
♀	
<i>Perigone & }</i>	as per ♂.
<i>Stamens }</i>	
<i>Capsule</i>	in =, globular, ridged, glab. crowned with the 2 acute stigmas, beaked, axillary, sessile.
<i>Floration</i>	April. (Fruit, June.)
<i>Place</i>	Arboretum, Kew.

Country . . .	Caspian Sea.
Dissection . . .	<p>f. 1. position of flowers. δ —2. flower and stamens. —3. a stamen. δ —4. flower with stamens and ovary. —5. capsule and anthers. —6. „ , transversely sected.</p>
Observation.	<p>Wildenow (Berlin. Baumz.) has included this plant under <i>Ulmus</i>, and erroneously inserted it as synonymous with <i>parvifolia</i> instead of with <i>ne-moralis</i>. It cannot be an <i>Ulmus</i>, as the fruit is a capsule, not a samara.</p>





FRAXINUS ORNUS.

European Flowering Ash.

<i>Flowers</i>	<i>corollate.</i>
<i>Leaves</i>	<i>petiolate, oblong-lanceolate, serrate. (W.)</i>
Tree	30 or more F.
— Branches . . .	pale-brown, glab.
— Shoots	olive-color, glab.
Petiole	(common) $7\frac{1}{2}$ inch, glab. grooved above.
„	(foliolar) very short, densely pubescent on inner side.
Leaves	alternate and opposite, impair-pinnate.
— Leaflets . . .	$3\frac{1}{2}$ pair, opposite, elliptic.
— Margin	equally adpressed-serrate.
— Serratures . .	incumbent.
— Sinus	acute.
— Sides	(exterior) subexcurved, (interior) sub 0.
— Vertices . . .	incurved, naked.
— Base	sub in =, ovate.
— Apex	shortly acuminate.
— Surface . . .	dark green, glab.
— Subface . . .	paler, glab. but densely pubescent each side base of axis to the middle.
— Axis	prominent.
— Branches . . .	fainter.
Inflorescence.	
— Panicle	long, pendant, axillary.
Peduncle	4 inch, slender, glab.
— Pedicels . . .	= $\frac{1}{2}$ fruit, glab.
Calyx	very short, glab. 4-dentate.
Petals	4, long, linear, white.
Stamens	2, shorter than petals.
— Filaments . . .	filiform, = anthers, inserted at base of ovary.
— Anthers	basifixt, cordate, oblong.
— Lobes	united their whole length.
Pistil.	
— Ovary	orbicular.
— Style	flat.
— Stigma	round, flat.

Samara	glab. narrow-lanceolate, $1\frac{1}{2}$ inch, membranous from middle to apex, with longitudinal nerves (Liras).
— Seed	oblong.
— Kernel	white.
Floration	May. (Fruit, Sept.)
Place	Arboretum, Kew.
Country	South of Europe.
Dissection	♂ f. 1. calyx. —2. four-petaled flower and 2 stamens. —3. pistil. —4. samara, longitudinally sected. —5. „ , transversely „ .





SMILAX RUBENS. ♂. (W.B.)

Red tendrilled Smilax.

<i>Stem</i>	<i>angulate, aculeate.</i>
<i>Leaves</i>	<i>ovate-subcordate, rather obtuse, mucronate, coriaceous, 5-nerved.</i>
— <i>Margin</i> . . .	<i>mucronate-denticulate near the base. (W.B.)</i>
<i>Shrub</i>	<i>weak, climbing.</i>
<i>Branches</i> . . .	<i>subangular, green with glaucous speckles.</i>
— <i>Spines</i> . . .	<i>straight, at the base of each stipule.</i>
<i>Petiole</i>	<i>short, glab.</i>
<i>Leaves</i>	<i>alternate, deltoid.</i>
— <i>Margin</i> . . .	<i>obsoletely spinose-dentate.</i>
— <i>Dents (Vert.)</i>	<i>short-spined.</i>
— <i>Base</i>	<i>rather incurved on each side the axis.</i>
— <i>Apex</i>	<i>acuminate with indurated tip.</i>
— <i>Surface</i> . . .	<i>glab. shining.</i>
— <i>Subface</i> . . .	<i>„ , closely crowded with glaucous speckles.</i>
— <i>Nerves</i> . . .	<i>5-7 issuing from the base of leaf, glab.</i>
— <i>Veins</i> . . .	<i>anastomosing.</i>
<i>Stipules</i> . . .	<i>brown, scarious, with a red, spiral tendril on each side.</i>
<i>Inflorescence.</i>	
<i>Umbels</i>	<i>3-4-flowered, axillary and terminal.</i>
— <i>Peduncle</i> . .	<i>glab. $\frac{1}{4}$ inch.</i>
— <i>Rays</i>	<i>„ , $\frac{1}{4}$ „ .</i>
<i>Perigone</i> . . .	<i>glab. 4-sepaled.</i>
— <i>Sepals</i> . . .	<i>revolute, linear, intire, obtuse.</i>
<i>Stamens</i> . . .	<i>4, inserted at base of petals.</i>
— <i>Filaments</i> . .	<i>glab. filiform.</i>
— <i>Anthers</i> . . .	<i>linear, $\frac{1}{4}$ length of filament, basifixt.</i>
<i>Floration</i> . . .	<i>31st July, 1821.</i>
<i>Place</i>	<i>T. Canham's, Esq. Twickenham.</i>
<i>Country</i> . . .	<i>North America.</i>







SMILAX QUADRANGULARIS. ♀ (W.)*Four-angled Smilax.*

Stem	<i>aculeate, 4-gonous.</i>
Leaves	<i>unarmed, ovate, acute, 5-nerved. (W.)</i>
Shrub	<i>weak, twining, climbing.</i>
Branches	<i>sub 4-gonous, glab. covered with pale spots.</i>
Petiole	<i>short, glab. grooved.</i>
Leaves	<i>alternate, deltoid-orbicular.</i>
— Margin	<i>intire.</i>
— Base	<i>subcordate-ovate.</i>
— Apex	<i>obtusely acuminate.</i>
— Surface	<i>shining, glab.</i>
— Subface	<i>„ „, (highly magnified) subpubescent.</i>
— Nerves	<i>3, from base of leaf, prominent.</i>
— Branches	<i>obsolete.</i>
Tendrils	<i>2, long, filiform, glab. from a sheath at base of petiole.</i>
Umbel	<i>2-3-flowered, axillary.</i>
— Peduncle & } — Rays	<i>½ inch glab.</i>
Perigone	<i>6-sepaled.</i>
— Sepals	<i>coriaceous, oblong.</i>
— Base	<i>tapered.</i>
— Apex	<i>acute.</i>
Pistil.	
— Ovary	<i>glab. obconic, free.</i>
— Styles	<i>0.</i>
— Stigmas	<i>3, long, linear, fleshy.</i>
Floration	<i>21st June, 1821.</i>
Place	<i>T. Canham's, Esq. Twickenham.</i>
Country	<i>Canada to Carolina.</i>







SMILAX LONGIFOLIA. ♂. (P. W. W.)

Long-leaved Smilax.

Stem	grooved-angulate, horizontally aculeate.
Leaves	alternate, petiolate, ovate-lanceolate, long-acuminate!
— Margin	scabrous-aculeate.
— Faces	glab.
— Nerves	5-7 glab! (unarmed).
Stipules	with long, spiral tendrils.
Flowers	♂, 3-4, axillary. (P. W. W.)
Shrub	weak, climbing.
— Stem	(lower part) subangular, green, smooth.
— Branches	green, levigate, spinous.
— Spines	horizontal, acute, short.
Petiole	glab. short, hunched.
Leaves	alternate, ovate or subcordate-lanceolate.
— Margin	shortly scabrous-aculeate.
— Base	subcordate.
— Apex	long-acuminate!
— Surface	glab.
— Subface	„, concolor.
— Nerves	3 from base of leaf, prominent, and 2 fainter subparallel to margin, glab.
Stipules	submembranous, reaching to the hunch of the petiole.
— Tendrils	from each side of the stipules, simple, spiral, long.
Umbel	axillary, simple, 3-4-flowered.
— Peduncles	$\frac{1}{4}$ inch } glab.
— Rays	$\frac{1}{2}$ „ }
Perigone	glab. 6-sepaled.
— Sepals	narrow, linear, acute, revolute.
Stamens	6, shorter than perigone, inserted under the ovary.
— Filaments	flat, linear.
— Anthers	on the terminal faces of filaments, oblong, flat, 2-ridged, membranous.
Pistil.	
— Ovary	elliptic, glab. free.
— Style	0.
— Stigmas	3.
Floration : . . .	17th July, 1821.
Place	T. Canham's, Esq. Twickenham.
Country	North America?
Observation.	Is probably a variety of <i>hastata</i> .



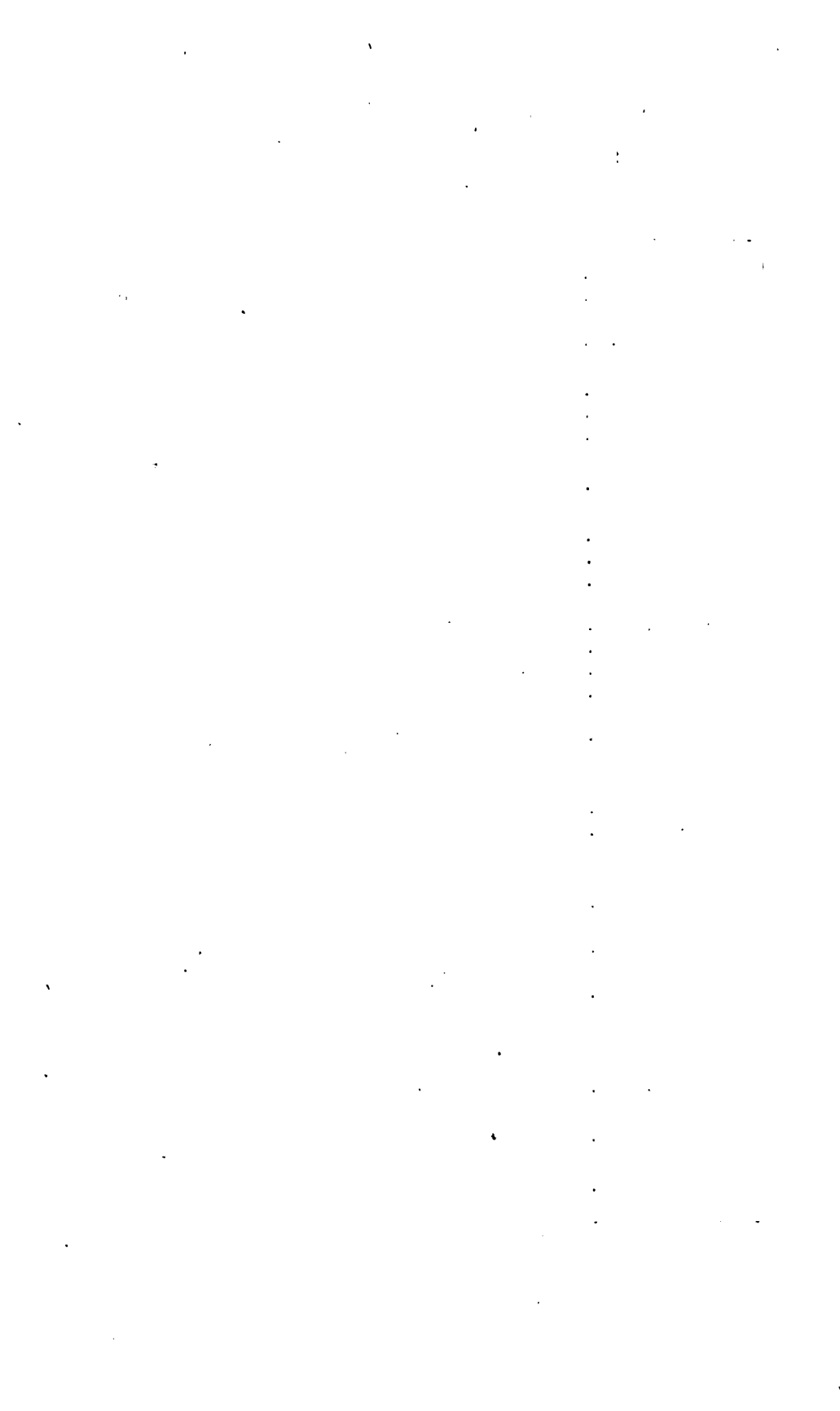




SMILAX SARSAPARILLA. ♂ (W.)

Glaucous-leaved Smilax.

<i>Stem</i>	<i>aculeate, sub4-gonous.</i>
<i>Leaves</i>	<i>(not aculeate) ovate-lanceolate, cuspidate, sub 5-nerved.</i>
— <i>Subface</i> . .	<i>glaucous. (W.)</i>
<i>Shrub</i>	<i>weak, climbing.</i>
<i>Branches</i>	<i>levigate, spinous, sub4-gonous.</i>
— <i>Spines</i>	<i>short, horizontal, bluntish.</i>
<i>Petiole</i>	<i>short, hunched, grooved above, glab.</i>
<i>Leaves</i>	<i>alternate, ovate.</i>
— <i>Margin</i>	<i>intire.</i>
— <i>Base</i>	<i>ovate, subdecurrent on the edge of the groove of petiole.</i>
— <i>Apex</i>	<i>acute-angular, mucronate.</i>
— <i>Surface</i>	<i>glab. shining.</i>
— <i>Subface</i>	<i>„ , glaucous !</i>
— <i>Nerves</i>	<i>3 prominent and 2 fainter, from base of petiole, glab.</i>
<i>Stipules</i>	<i>submembranous, = hunch of petiole, 2-cirrhose, long, linear, glab.</i>
<i>Umbel</i>	<i>3-4-flowered, simple, axillary, pedunculate.</i>
— <i>Peduncle</i>	<i>1 inch, smooth.</i>
— <i>Rays</i>	<i>½ „ „ .</i>
<i>Perigone</i>	<i>glab. 6-sepaled.</i>
— <i>Sepals</i>	<i>linear, oblong, obtuse-angular, intire.</i>
<i>Stamens</i>	<i>6, shorter than the perigone and inserted at its base inside.</i>
— <i>Filaments</i>	<i>flat, linear.</i>
— <i>Anthers</i>	<i>„ , oblong, thin, membranous, = filaments, and on their apical faces.</i>
<i>Floration</i>	<i>17th July, 1821.</i>
<i>Place</i>	<i>T. Canham's, Esq. Twickenham.</i>
<i>Country</i>	<i>Pennsylvania. Virginia.</i>







CLEMATIS ANGUSTIFOLIA. (W.)*Narrow-leaved Virgin's Bow.*

<i>Stem</i>	<i>simple, striate, erect.</i>
<i>Leaves</i>	<i>pinnate.</i>
— <i>Leaflets</i>	<i>lanceolate, obtuse (lower) 3-parted.</i>
<i>Corol</i>	<i>polypetalous. (W.)</i>
<i>Subshrub</i>	<i>slender, low, erect.</i>
<i>Stem</i>	<i>slightly lirate-sulcate, glab.</i>
— <i>Branches</i>	„ „ , <i>few-haired.</i>
<i>Petiole</i>	<i>(common) long, with few, adpressed hairs.</i> <i>(foliolar) $\frac{1}{2}$ length of leaflet, glab.</i>
<i>Leaves</i>	<i>opposite, pinnate.</i>
— <i>Leaflets</i>	<i>2$\frac{1}{2}$ pair, narrow-lanceolate.</i>
— <i>Margin</i>	<i>intire.</i>
— <i>Base</i>	<i>attenuated.</i>
— <i>Apex</i>	<i>acuminate.</i>
— <i>Faces</i>	<i>glab.</i>
— <i>Nerves</i>	<i>(3 principal) reticulating with the secondaries.</i>
<i>Inflorescence</i>	<i>terminal, 3-furcate.</i>
— <i>Furcations</i>	<i>3-flowered (middle) 1-flowered, (laterals) shorter.</i>
— <i>Pedicels</i>	<i>long, with few, horizontal, white hairs.</i>
<i>Bracteas</i>	<i>2 at base of unopened flowers, narrow, acute, sericeous.</i>
<i>Perigone</i>	<i>sericeous, 5-sepaled.</i>
— <i>Sepals</i>	<i>cuneate-oblong, exceeding the stamens.</i>
<i>Stamens</i>	<i>numerous, in=, inserted round the ovaries.</i>
— <i>Filaments</i>	<i>glab. flat, linear, = anthers.</i>
— <i>Anthers</i>	<i>oblong, as if jointed on the filaments, sub4-edged.</i>
<i>Pistils</i>	<i>numerous.</i>
— <i>Ovaries</i>	<i>free, covered with long, silky hairs.</i>
— <i>Styles</i>	<i>long, linear, haired like the ovaries.</i>
— <i>Stigmas</i>	<i>0 apparent.</i>
<i>Floration</i>	<i>16th July, 1821.</i>
<i>Place</i>	<i>Arboretum, Kew.</i>
<i>Country</i>	<i>Austria. Siberia.</i>







CISSUS ORIENTALIS. (W. E.)

Oriental Cissus.

Leaves	2-ternate.
— Leaflets	ovate-elliptic, largely serrate, glab.
Corymbs	2-chotomous, (W. E.)
Subshrub	tufted, weak, rather climbing, 1½ F.
Stem	obtusely 6-angled.
— Epidermis	purplish, glab. warty.
— Branches	rather knotty at insertion of leaves and corymbs.
— Epidermis	as 4f' stem.
Petiole	(common) 4-inch. } reddish, glab. grooved above.
”	(secondary) 1½ ” }
”	(foliolar) 0.
Leaves	2-ternate, alternately lateral, opposite the corymbs.
— Leaflets	9, (3 times 3) inverse-ovate, laterals sessile, mid-one, (impair) long petiolate.
— Base	obtuse-angular, intire, (subspatulate.)
— Apex	obtuse.
— Margin	largely dentate from middle to apex.
— Dents	obtuse-angular, broad.
— Sinus	”
— Sides	excurved.
— Vertices	incrassated.
— Surface	dark green.
— Parenchyma	glab.
— Axis & Ramific. }	elevated, purple.
— Subface	paler.
— Parenchyma	glab.
— Axis & Ramific. }	” , elevated.
— Veins	reticulated.
Inflorescence	lateral and leaf-opposite, compound corymbs.
— Anthopode	superdecompound, leaf-opposite.
— Peduncle	glab. twice or thrice branched, tendril-like, each bearing a corymb.
— Pedicels	glab. twice as long as flowers, divaricated.
Bractea	(Podophyl) minute, at base of each pair of pedicels, 2-parted, with scarious segments.
Calyx	monosepalous, funnel-form, shortly 4-dentate, glab. sparsed with minute, brown scales.
— Tube	constituting the pedicel.
— Dents	pinkish, membranous, obtuse.
— Sinus	obtuse-angular.

— Sides	excurved.
— Apices	acute-pointed.
Corol	4-petaled.
— Petals	coriaceous, sericeous, ovate, concave, intire, twice as long as calyx.
Gonophore	cup-form, obtusely lobed, bearing the stamens under the sines of the lobes, midway to base.
Stamens	4, sub = petals.
— Filaments	tapering upwards, flattish.
— Anthers	(whole) roundish, 2-lobed, basifixt.
— Lobes	adnate, elliptic, laterally apertous.
Pistil	short.
— Ovary	semi-adhering, one $\frac{1}{2}$ rising above the gonophore.
— Style	very short, tapering.
— Stigma	simple.
Floration	23rd August, 1823.
Country	Orient.
Place	Messrs. C. Loddiges & Sons', Hackney.
Dissection	1. calyx (outside.) 2. corol seen from above, shewing the 4 stamens. 3. a petal. 4. the gonophore, shewing the pistil and insertion of stamens.





1. *E. ...* 2. *E. ...*

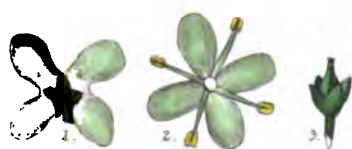
ILEX DAHOON. (M. F.) V. MAJOR.

Large Dahoon-Holly.

Leaves	<i>lanceolate-elliptic, subintire.</i>
— Margin	<i>reflexed.</i>
— Axis	<i>(subface) villose.</i>
Peduncle	<i>lateral and terminal, corymbose-paniculate.</i> <i>(Ph.)</i>
Shrub	<i>upright, 3-4 F.</i>
Stem	<i>erect, stiff,</i>
— Branches	<i>(epidermis) green, shortly and densely pubescent.</i>
Petiole ,	<i>short, pubescent.</i>
Leaves	<i>coriaceous, alternate.</i>
— Figure	<i>oblong, 3-4$\frac{1}{2}$ inch.</i>
— Base	<i>rather tapered.</i>
— Apex	<i>obtuse-angular.</i>
— Margin	<i>subintire (sometimes with denticulate apex.)</i>
— Surface	<i>shining, glab. bright-green.</i>
— Subface	<i>paler.</i>
— Parenchyma	<i>shortly pubescent.</i>
— Axis	<i>elevated.</i>
— Sides	<i>densely and horizontally pubescent.</i>
— Ramifications	<i>nearly obsolete, and sunk level with parenchyma.</i>
Inflorescence	<i>corymbose-paniculate, (crowded corymbs on the</i> <i>terminal branches.)</i>
— Anthopode	<i>ramose.</i>
— Peduncle	<i>pubescent, $\frac{1}{2}$ inch.</i>
— Pedicels	<i>of various short lengths.</i>
Calyx	<i>monosepalous.</i>
— Tube	<i>very short, with a rim-like projection in the mid-</i> <i>dle,</i>
— Limb	<i>4-fid.</i>
— Segments	<i>acute-angular.</i>
— Sinus	<i>obtuse.</i>
— Sides	<i>excurved, forming the sinus.</i>
— Apices	<i>acute.</i>
Corol	<i>monopetalous, rotate, white, 4-parted.</i>
— Segments	<i>(parts) subquadrate.</i>
— Sinus	<i>right-angled.</i>
— Sides	<i>rectilinear, intire.</i>
— Apices	<i>obtuse.</i>
Stamens	<i>4, shorter than corol.</i>
— Origin	<i>at base of the corol-segments in the interstices.</i>
— Filaments	<i>short, thickish, glab.</i>
— Anthers	<i>fixed a little above their bases, 2-lobed.</i>

— Lobes	adnate, oblong, laterally opening.
Pistil	short, = segments of calyx.
— Ovary	ovate, ending in 2 stigmas.
— Style	0.
— Stigmas	pointed, short.
Floration	12th July, 1823.
Place	Messrs. Whitley & Co.'s, Fulham.
Country	In open swamps, Carolina to Florida.
Dissection	1. calyx and pistil. 2. corol and stamens.





ILEX PRINOIDES. (W.)

Deciduous Holly.

<i>Leaves</i>	<i>deciduous, lanceolate, attenuated into the petiole, slightly serrated.</i>
— <i>Subface</i>	<i>(axis) villose.</i>
<i>Peduncle</i>	<i>1-flowered, aggregate, fertile ones solitary. (Ph.)</i>
<i>Shrub</i>	<i>bushy, 6-8. F.</i>
— <i>Branches</i>	<i>(epidermis) pale-brown, gland-haired.</i>
— <i>Branchlets</i>	<i>(") green, " .</i>
<i>Petiole.</i>	<i>very short, and gland-haired.</i>
<i>Leaves</i>	<i>annual, in alternate bundles.</i>
— <i>Figure</i>	<i>lanceolate (or obovate-lanceolate).</i>
— <i>Base</i>	<i>tapered.</i>
— <i>Apex</i>	<i>obtuse.</i>
— <i>Margin</i>	<i>(whole contour!) incumbently serrate.</i>
— <i>Serratures</i>	<i>long.</i>
— <i>Sides</i>	<i>(ext.) excurved (int.) sub 0.</i>
— <i>Vertices</i>	<i>tip with black glands.</i>
— <i>Surface</i>	<i>glab.</i>
— <i>Axis</i>	<i>hollow.</i>
— <i>Subface</i>	<i>(parenchyma) glab.</i>
— <i>Axis</i>	<i>prominent, " ! (a few short hairs at base.)</i>
— <i>Ramifications</i>	<i>very faint.</i>
<i>Inflorescence</i>	<i>flowers, solitary (1-4) axillary.</i>
— <i>Peduncle</i>	<i>½ inch, rather thicker upwards.</i>
<i>Calyx</i>	<i>monosepalous, very short, 4-fid.</i>
— <i>Segments</i>	<i>acute-angular.</i>
— <i>Sinus</i>	<i>obtuse.</i>
— <i>Sides</i>	<i>minutely serrate.</i>
— <i>Apices</i>	<i>acute, red.</i>
<i>Corol</i>	<i>monopetalous, rotate, 4-parted.</i>
— <i>Segments</i>	<i>semi-elliptic.</i>
— <i>Sides</i>	<i>intire.</i>
— <i>Apices</i>	<i>obtuse.</i>
<i>Stamens.</i>	<i>4, = corol.</i>
— <i>Origin</i>	<i>at base of segments of corol.</i>
— <i>Filaments</i>	<i>glab. shining.</i>
— <i>Anthers</i>	<i>orbicular, basifixt, 2-lobed.</i>
— <i>Lobes</i>	<i>oblong, adnate, apertous laterally.</i>
<i>Pistil</i>	
— <i>Ovary</i>	<i>oval, green, glab.</i>
— <i>Style</i>	<i>0.</i>
— <i>Stigmas</i>	<i>4, short, pointed.</i>

Floration	23rd June, 1823.
Place	T. Canham's Esq. Twickenham.
Country	On high mountains, near the edges of pouds, Canada to Carolina.
Dissection	1. calyx (outside) and corol. 2. corol and stamens. 3. calyx and pistil.





1.

S. J. Pres. & Co.

Printed by T. & A. Arch. Cornwall. No. 1. 1846.

W. & A. G. & Co.

AZALEA SPECIOSA. (M. & W. B.)

Large Scarlet Azalea.

<i>Leaves</i>	<i>lanceolate, both ends acute, ciliate.</i>
<i>Corymb.</i>	<i>terminal.</i>
<i>Calyx</i>	<i>(segments) spatulate.</i>
<i>Corol.</i>	<i>pubescent outside.</i>
<i>Stamens</i>	<i>longer than corol. (W. B.)</i>
<i>Shrub</i>	6 F.
— <i>Branches</i>	(epidermis) brown, glab.
<i>Petiole</i>	O.
<i>Leaves</i>	in alternate and terminal bundles.
— <i>Figure</i>	<i>lanceolate.</i>
— <i>Base.</i>	} <i>tapered.</i>
— <i>Apex</i>	
— <i>Margin.</i>	<i>entire, ciliate.</i>
— <i>Surface</i>	<i>pale-green, shining.</i>
— <i>Parenchyma</i>	<i>sparsed with fleshy hairs.</i>
— <i>Axis.</i>	<i>pubescent.</i>
— <i>Subface</i>	<i>concolor.</i>
— <i>Parenchyma</i>	<i>pubescent.</i>
— <i>Axis.</i>	” , <i>prominent,</i>
— <i>Ramifications</i>	” .
<i>Inflorescence</i>	<i>a terminal umbel.</i>
— <i>Peduncles.</i>	<i>(rays)=length of calyx, white-adpressed-haired.</i>
<i>Bracteas</i>	<i>(podophyls) at base of each ray, membranous, linear, obtuse, intermixed with subulate ones.</i>
<i>Calyx</i>	<i>monosepalous, twice and $\frac{1}{2}$ length of tube of corol! pubescent, inequally 5-fid.</i>
— <i>Segments</i>	<i>spatulate! in=, pubescent.</i>
— <i>Sinus</i>	<i>obtuse.</i>
— <i>Sides</i>	<i>ciliate.</i>
— <i>Apices</i>	<i>obtuse.</i>
<i>Corol</i>	<i>monopetalous, scarlet, subsericeous (not glutinous or glandular!)</i>
— <i>Segments</i>	<i>semi-lanceolate, undulate.</i>
— <i>Sinus</i>	<i>acute.</i>
— <i>Sides</i>	<i>excurred.</i>
— <i>Apices</i>	<i>obtuse-angular.</i>
<i>Stamens</i>	<i>5, longer than corol, originating from base of ovary.</i>
— <i>Filaments</i>	<i>red, subulate, covered $\frac{1}{2}$ length with horizontal, white hairs.</i>

Pistil	rather longer than stamens.
Ovary	green, conic, sericeous.
— Style	glab. cylindric, rather thickened upwards.
— Stigma.	simple, club'd.
Floration	18th June, 1823.
Place	Messrs. Loddiges & Sons', Hackney.
Country	North America.
Dissection.	1. calyx and style.

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LONICERA CHINENSIS. (H. K.)

Chinese Honeysuckle.

<i>Leaves</i>	<i>opposite, elliptic, intire, ciliate.</i>
<i>Pedicels</i>	<i>axillar, 2-flowered at apex.</i>
<i>Involucre</i>	<i>at base of flowers, 2-foliate, opposite.</i>
<i>Bractea</i>	<i>one at base of each flower, narrow-lanceolate, pubescent.</i>
<i>Calyx</i>	<i>" , superior, 5-dentate.</i>
<i>Corol</i>	<i>tubular, 2-lipt.</i>
<i>Ovaries</i> ,	<i>2, distinct. (P. W. W.)</i>
<i>Shrub</i>	<i>low, climbing.</i>
<i>Stem</i>	<i>weak, cylindric, wiry.</i>
— <i>Branches</i>	<i>(epidermis) purple-brown, horizontally white-haired.</i>
<i>Petioles</i>	<i>very short, long-pubescent, opposite, hunched and joined.</i>
<i>Leaves</i>	<i>soft, opposite.</i>
— <i>Figure</i>	<i>elliptic.</i>
— <i>Base</i>	<i>ovate.</i>
— <i>Apex</i>	<i>obtuse-angular.</i>
— <i>Margin</i>	<i>intire, long-white-ciliate.</i>
— <i>Surface</i>	<i>dark-green, glab.</i>
— <i>Axis</i>	<i>purple, pubescent.</i>
— <i>Ramifications</i> . .	<i>" , narrow, glab.</i>
— <i>Subface</i>	<i>paler.</i>
— <i>Parenchyma</i> . . .	<i>glab.</i>
— <i>Axis & Ramific.</i> }	<i>purple, with solitary hairs.</i>
— <i>Veins</i>	<i>reticulating.</i>
<i>Inflorescence</i> . . .	<i>on 2-flowered, supra-axillar, opposite peduncles.</i>
— <i>Flowers</i>	<i>sessile, separate (not coadurate)</i>
— <i>Peduncle</i>	<i>densely pubescent, 1 inch.</i>
— <i>Pedicel</i>	<i>very short, (sub. O.)</i>
<i>Involucres</i>	<i>(Podophyls) 2, leaflike, coadunate, on the top of the peduncles, from whence originate the 2 flowers.</i>
<i>Bractea</i>	<i>(amphanth.) 1 at base of each flower, and = length of calyx, narrow, lanceolate, purple, pubescent.</i>
<i>Calyx</i>	<i>monosepalous, glab.</i>
— <i>Tube</i>	<i>longish, ventricose.</i>
— <i>Limb</i>	<i>5-dentate.</i>
— <i>Sinus</i>	<i>acute.</i>
— <i>Dents</i>	<i>purple, acute, long-haired.</i>
<i>Corol</i>	<i>monopetalous, it=, tubular.</i>
— <i>Tube</i>	<i>= ½ length of corol, pubescent within.</i>

— Limb	2-lipt. { 4- fid , obtuse.
— Sinus	{ 1 " " , reflected. (of upper lip) acute.
Stamens	5, longer than corol.
— Origin	at base of segments, (tomias.)
— Filaments	slender, filiform, glab.
— Anthers	long, medifixt, 2-lobed.
— Lobes	linear.
Pistil.	= stamens.
— Ovaries	2, distinct, inferior, hid in calyx.
— Style	slender, filiform, glab.
— Stigma	simple, club'd, pubescent.
Floration	9th July, 1823.
Place	Arboretum, Kew.
Country	China.
Dissection	1. two inferior ovaries, with each a scale at base. 2. one ovary crowned by the calyx. 3. corol laid open to shew the insertion of stamens. 4. style.





1. Flower.



3.



2.

VIBURNUM ACERIFOLIUM. (W.)

Maple-leaved Viburnum.

Branchlets & } Petioles } Leaves	<i>pilose, eglandulose, subcordate-ovate, (or 3-lobed.) acuminate, sharply serrate.</i>
— Subface	<i>pubescent.</i>
Cyme	<i>long-pedunculate, (Ph.)</i>
Shrub	<i>upright, 3 F.</i>
— Stem	<i>(epidermis) brown, glab.</i>
— Branchlets	<i>(") green, pubescent.</i>
Petiole	<i>½ length of leaf, pubescent, eglandular! grooved above.</i>
Leaves	<i>1—3, from common, opposite petioles.</i>
— Figure	<i>3-lobed.</i>
— Base	<i>cordate.</i>
— Apex	<i>acute.</i>
— Disk	<i>with 3 short tomas, (incisions.)</i>
— Segments	<i>obtuse-angular.</i>
— Sinus	<i>very obtuse.</i>
— Vertices	<i>intire, acute.</i>
— Margin	<i>inequally dentate.</i>
— Dents	<i>obtuse.</i>
— Sinus	<i>"</i>
— Sides	<i>subrotund, ciliate with short hairs.</i>
— Vertices	<i>callous.</i>
— Surface	<i>dark green, with solitary, very short hairs.</i>
— Surface	<i>(parenchyma) pubescent.</i>
— Axis	<i>prominent, " (gland-haired.)</i>
— Ramifications	<i>" (lower pair) opposite, (rest) alternate.</i>
Stipules	<i>one on each base of petiole, subulate, intire, pubescent.</i>
Inflorescence	<i>a terminal cyme.</i>
— Anthopode	<i>ramose.</i>
— Peduncle	<i>(rays) long, from a centre, shortly pubescent.</i>
— Pedicels	<i>from various points, in=.</i>
Calyx	<i>monosepalous, shortly 5-dentate.</i>
— Tube	<i>jelly-glass shaped.</i>
— Dents	<i>very short.</i>
— Sinus	<i>obtuse.</i>
— Sides & } — Apices }	<i>jagged.</i>
Corol	<i>monopetalous, rotate, 5-parted.</i>

— Tube	very short.
— Segments	white, intire, obtuse, with imbricating bases.
— Sides	excurved, intire.
— Apices	rounded.
Stamens	5, longer than corol.
— Origin	at base of corol, below the interstices.
— Filaments	glab. subulate.
— Anthers	orbicular, basifixt.
— Lobes	adnate.
Pistil	
— Ovary	$\frac{2}{3}$ adhering.
— Style	O.
— Stigma	simple, mealy, (only excoriated apex of ovary.)
Floration	20 June, 1823.
Place	Arboretum, Kew.
Country	In rocky mountainous situations, New England or Carolina.
Dissection	1. calyx (outside) and corol. 2. corol cut through and laid open, with the 5 stamens. 3. calyx and pistil.





ATRAPHAXIS SPINOSA. (W.)

Prickly Atraphaxis.

Branches . . .	<i>spinose. (W. B.)</i>
Shrub . . .	very low, 1 F.
Stem . . .	erect, stiff.
— Epidermis . . .	pale brown, glab.
— Branches . . .	stiff, dead at ends, (giving a prickly appearance.)
— Epidermis . . .	pale brown.
Petiole . . .	glab. very short.
Leaves . . .	coriaceous, in alternate bundles of 4—5.
— Figure . . .	ovate-elliptic.
— Base . . .	" "
— Apex . . .	acute.
— Margin . . .	intire, subrevolute.
— Surface . . .	green, glab. covered with minute white spangles.
— Subface . . .	paler, glab. white-speckled.
— Axis . . .	scarcely prominent.
— Ramific. . . .	O.
Inflorescence . . .	flowers 2—3 together from the lateral leaf-bundles.
— Peduncle . . .	reddish-white, glab. $\frac{1}{4}$ inch.
Calyx . . .	short, with colored margin, 2-sepaled.
— Sepals . . .	elliptic, opposite, intire.
Corol . . .	white, tinged pink in the disk, 2-petaled.
— Petals . . .	much longer than calyx ! undulate, (giving a dentate appearance)
Stamens . . .	6, shorter than petals, united at base.
— Filaments . . .	tapering.
— Anthers . . .	2-lobed.
— Lobes . . .	oblong, laterally opening.
Pistil . . .	
— Ovary . . .	green, glab. flat-orbicular, with wing-like margins.
— Style . . .	very short.
— Stigma . . .	pink, puckered, revolute, 2-lobed.
Floration . . .	30 June, 1823.
Place . . .	Messrs. Loddiges & Sons', Hackney.
Country . . .	Near the Caspian Sea.
Dissection . . .	1. calyx. 2. corol and stamens. 3. ovary and stigma. 4. one stamen.







E. Smith Del.

Paddy's Rock Arch, Cornhill, March 1846.

Widdell Sc.

AESCULUS PAVIA. (W.) V. SUBLACINIATA.

Sublaciniated red-flowered Horse Chestnut.

<i>Leaves</i>	5-nate, glab. inequally serrate.
<i>Raceme</i>	lax.
— <i>Fascicle</i>	sub 3-flowered.
<i>Corol</i>	4-petaled.
— <i>Petals</i>	connivent.
— <i>Claws</i>	= length of calyx.
<i>Stamens</i>	7, shorter than corol.
<i>Fruit</i>	unarmed, (inermous.) (Ph.)
<i>Shrub</i>	3—4 F.
<i>Branches</i>	hanging, weak.
— <i>Epidermis</i>	pale-brown, glab.
— <i>Shoots</i>	drab-colour, very short, gland-pubescent.
<i>Petiole</i>	(common) 3-inch, purple-brown, glab. (foliolar) very short.
<i>Leaves</i>	opposite, 5-folioled, from a point.
— <i>Leaflets</i>	lanceolate.
— <i>Base</i>	very taper and vanishing into the petiole.
— <i>Apex</i>	acuminate.
— <i>Margin</i>	subincised, 2-serrate.
— <i>Serratures</i>	acute, rather hooked forward, long !
— <i>Sinus</i>	acute.
— <i>Sides</i>	excurved.
— <i>Vertices</i>	naked.
— <i>Surface</i>	dark green, shining.
— <i>Axis &</i>	very bold!
— <i>Ramific.</i>	
— <i>Subface</i>	yellow-green.
— <i>Parenchyma</i>	glab.
— <i>Axis</i>	„ , very prominent.
— <i>Ramific.</i>	alternate, „ , parallel.
— <i>Veins</i>	reticulated.
<i>Inflorescence</i>	a terminal, 12-flowered raceme.
— <i>Anthopode</i>	branched.
— <i>Peduncle &</i>	red, yellow-tomentose.
— <i>Pedicels</i>	
<i>Calyx</i>	monosepalous, red, covered with yellow pubes- cence, 4-dentate, (with smaller dents interposed.)
— <i>Tube</i>	long, subventricose in the middle.
— <i>Dents</i>	obtuse-angular.
— <i>Sinus</i>	acute- „ .
— <i>Sides &</i>	ciliate.
— <i>Apices</i>	

Corol	red, inequally 4-petaled.
— Petals	<div> <div> (2 shorter) (2 longer) </div> <div> limb, oblong, obtuse. claw, shorter than calyx! limb, ovate, obtuse. claw, longer than calyx. — all with elevated nerves, and fleshy dentate margins. </div> </div>
Stamens	8, shorter than petals and adnate to the claws.
— Filaments	linear, lower part pubescent.
— Anthers	oblong, basifixt, 2-lobed.
— Lobes	aduate, laterally opening.
Pistil	longer than petals.
— Ovary	rose-colour, cottony, obovate-elliptic, attenuated into the style.
— Style	long, cylindric, finely furrowed, pubescent.
— Stigma	apparently O.
Fruit	(capsule) leathery, inverse-ovate, obsoletely ridged at top, pale-olive-brown, shortly and densely tomentose, (not prickled.)
— Cells	3, 1-2 seeded.
Floration	26th June, 1823.
Place	Messrs. Whitley & Co.'s, Fulham.
Country	North America.
Dissection	1. calyx. 2. the 4 petals and stamens. 3. pistil. 4. fruit, (capsule.)





ÆSCULUS CARNEA. (HAYNE. DEND.)*Rose-coloured Horse-Chestnut.*

<i>Leaves</i>	6—7-nate.
— <i>Leaflets</i>	obovate, acuminate, 2-serrate.
<i>Corol</i>	4-petaled, connivent.
— <i>Claws</i>	shorter than calyx.
<i>Stamens</i>	longer than corol.
— <i>Anthers</i>	glab. (Hayne.)
<i>Shrub</i>	erect, 7 F.
— <i>Branches</i>	cylindric.
— <i>Epidermis</i>	pale-brown, glab. warted.
— <i>Branchlets</i>	cylindric, drab, finely short-pubescent.
<i>Petiole</i>	{ (common) 4 inch, glab. (foliolar) 0.
<i>Leaves</i>	opposite, 5-foliolous.
— <i>Foliole</i>	obovate-cuneate.
— <i>Base</i>	attenuated into the axis.
— <i>Apex</i>	acuminate.
— <i>Margin</i>	subincised, inequally 2-dentate.
— <i>Dents</i>	obtuse-angular.
— <i>Sinus</i>	acute- ”
— <i>Sides</i>	excurved.
— <i>Vertices</i>	naked.
— <i>Surface</i>	glab. puckered.
— <i>Subface</i>	
— <i>Parenchyma</i>	with a few solitary, erect hairs.
— <i>Axis</i>	very prominent, glab. (a few hairs near the base.)
— <i>Ramific.</i>	glab. ”, alternate, parallel, subsimple.
— <i>∠s.</i>	with hair bundles.
<i>Inflorescence</i>	a many-flowered, erect raceme, 8 inch.
— <i>Anthopode</i>	branched.
— <i>Peduncle</i>	(axis) red, shortly pubescent.
— <i>Pedicels</i>	” ” ” ”, simple and branched.
<i>Calyx</i>	monosepalous, red, reflectedly sericeous, inequally dentate.
— <i>Tube</i>	longish, cylindric.
— <i>Dents</i>	obtuse and acute.
— <i>Sinus</i>	acute.
— <i>Sides &</i>	} sericeous.
— <i>Apices</i>	
<i>Corol</i>	inequally 5-petaled.
— <i>Petals</i>	(2) circular, rose-colour, subcrenate, with darker spots and fringed margin.
— <i>Claws</i>	shorter than corol.

— Petals	(other 3) obovate-cuneate, dark-crimson above, with undulate-ciliate margin.
— Claws	= to calyx, cottony.
Stamens	8, longer than short petals and sub = the longer, originating from base of ovary.
— Filaments	ascending, 2-thirds from base long-pubescent, (cottony.)
— Anthers	oblong, medifixed, 2-lobed.
— Lobes	adnate with hairy margins (not glab. as de Hayne) and opening at sides.
Pistil	pubescent, longer than stamens and petals.
— Style	long, sericeous, subulate.
— Stigma	small, emarginate.
Fruit	elliptic-globular, covered with subulate prickles.
— Cells	3.
— Seed	1 in each cell.
Floration	24th June, 1823.
Place	Mr. James Lee's, Hammersmith.
Country	North America.
Dissection :	1. calyx. 2. the 4 petals. 3. a stamen. 4. pistil.





OXYCOCCUS MACROCARPUS. (P.)

Large-fruited Cranberry.

<i>Plant</i>	<i>creeping.</i>
<i>Stem</i>	<i>ascending.</i>
<i>Leaves</i>	<i>oblong, intire, flattish, obtuse, glab.</i>
— <i>Subface.</i>	<i>whitish.</i>
<i>Pedice</i> l	<i>elongate.</i>
<i>Corol</i>	<i>(segmenta) lanceolate. (Ph.)</i>
<i>Shrub</i>	<i>slender, creeping.</i>
<i>Stem.</i>	<i>pale-brown, glab.</i>
<i>Petiole</i>	<i>yellow, glab. short.</i>
<i>Leaves</i>	<i>rather closely sparsed.</i>
— <i>Figure</i>	<i>long-elliptic.</i>
— <i>Base &</i>	<i>obtuse.</i>
— <i>Apex</i>	
— <i>Margin</i>	<i>intire, subrevolute, ciliate.</i>
— <i>Surface</i>	<i>pale green, glab.</i>
— <i>Subface</i>	<i>glaucous, „ .</i>
— <i>Axis.</i>	<i>subelevated.</i>
— <i>Ramifications</i>	<i>O.</i>
<i>Inflorescence</i>	<i>flowers single, axillary.</i>
— <i>Peduncle</i>	<i>1½ inch, white-haired.</i>
<i>Bractea</i>	<i>(podophyl) leaf-like, alternate, on middle of each peduncle, lanceolate (subrhomboid,) intire, with purple apex.</i>
<i>Calyx</i>	<i>monosepalous, purplish, glab. 4-fid.</i>
— <i>Segments &</i>	<i>acute-angular.</i>
— <i>Sinus</i>	
— <i>Sides</i>	<i>rectilinear, ciliate.</i>
— <i>Apices</i>	<i>acute.</i>
<i>Corol</i>	<i>4-petaled, glab.</i>
— <i>Petals</i>	<i>long, linear, revolute!</i>
— <i>Margin</i>	<i>intire.</i>
— <i>Apex</i>	<i>obtuse.</i>
<i>Phoron</i>	<i>flat, 5-sided, the style piercing the centre.</i>
<i>Stamens</i>	<i>8, shorter than petals, and fixed to their claws at the under edge of phoron.</i>
— <i>Filaments</i>	<i>purple, sericeous, flat, short.</i>
— <i>Anthers</i>	<i>(including horns) twice as long as filaments, 2-lobed.</i>
— <i>Lobes</i>	<i>adnate, oblong, each attenuated into a horn apertous at the apex, and laterally grooved.</i>

Pistil	purple, = stamens, slender, subulate.
— Ovary	inferior.
Berry	(acrosarc) globular, red, crowned by minute persistent calyx.
— Cells	4, polyspermous.
— Seeds	brown, placentated on central angle of cells.
Floration	24th June, 1823.
Place	Mr. James Lee's, Hammersmith.
Country	In bogs on sandy soil and high mountains, Canada to Virginia.
Dissection	1. calyx. 2. a petal and one stamen. 3. berry (acrosarc.) 4. „ , transversely sected.





VACCINIUM CORYMBOSUM. (W.)

Corymbose Whortle-Berry.

Branches	<i>floriferous, subaphyllous.</i>
Leaves	<i>oblong-oval, both ends acute, mucronate, subintire.</i>
— Subface	<i>tomentose.</i>
— Junior	<i>(faces) pubescent.</i>
— Adult	<i>(surface) glab. (subface, nerves and veins) pubescent.</i>
Raceme	<i>short, sessile, scaly-bracteate.</i>
Corol	<i>cylindric-ovate.</i>
Calyx	<i>erect.</i>
Style	<i>suberect. (Ph.)</i>
Shrub	<i>bushy, 3-4 F.</i>
— Branches	<i>(epidermis) green, short-haired, glaucous-speckled.</i>
Petiole	<i>very short, thick, pubescent.</i>
Leaves	<i>soft, thickish, subsessile, alternating on the shoots.</i>
— Figure	<i>elliptic-lanceolate.</i>
— Base	<i>tapering.</i>
— Apex	<i>acute-angular.</i>
— Margin	<i>both sharply and obtusely serrate.</i>
— Serratures	<i>fleshy, thick, small.</i>
— Sides	<i>(ext.) excurved.</i>
— Vertices	<i>pedicel-glanded.</i>
— Surface	<i>green, glab.</i>
— Axis	<i>few-haired.</i>
— Subface	
— Parenchyma	<i>set with short fleshy hairs.</i>
— Axis	<i>prominent, densely covered with spreading hairs.</i>
— Ramifications	<i>little elevated and vanishing into the parenchyma,</i>
	<i>few-short-fleshy-haired.</i>
— Veins	<i>obsolete.</i>
Inflorescence	<i>lateral and terminal in (about) 7-flowered racemes.</i>
— Anthopode	<i>branched.</i>
— Peduncle &	<i>green, densely short-gland-haired, the latter sub = length of flowers.</i>
— Pedicel	
Calyx	<i>monosepalous, rather contracted at the tomas (divisions), globular of unevensubface, 5-dentate.</i>
— Tube	<i>short.</i>
— Dents	<i>obtuse-angular, erect.</i>
— Sinus	<i>"</i>
— Sides	<i>excurved, waved, subciliate.</i>
— Apices	<i>acute.</i>
Corol	<i>monopetalous, yellowish-pink, glab. elliptic-ovate! subcoarctate at mouth, slightly 5-ridged, 5-dentate.</i>
— Dents	<i>short, recurved, obtuse-angular, subpubescent.</i>
— Sinus	<i>acute.</i>

Phoron	flat,
— Margin	elevated.
Stamens	10, shorter than corol, subunited at base.
— Filaments	pink, flat, rather ribbed at base, ciliate with long white hairs.
— Anthers	= length of filaments, oblong, brown, glab. 2-lobed, fixed a little above the base.
— Lobes	linear-oblong, each with a horn pervious at the apex.
Pistil	projecting beyond the corol!
— Ovary	inferior, hid in the calyx.
— Style	rather tapered, glab.
Berry	(acrosarc) inferior, globular, crowned by persistent calyx, 4-celled.
— Cells	several-seeded.
— Seeds	brown, glab. elevated-reticulated!
— Episperm	crustaceous.
Floration	4th July, 1823.
Place	Arboretum, Kew.
Country	In Swamps and wet Woods, Canada to Virginia.
Dissection	1. calyx and pistil. 2. „ and corol. 3. united stamens, spread open. 4. one stamen separated. 5. a corymb of berries, (acrosarcs.)





VACCINIUM MARIANUM. (N.S.)

Maryland Whortle-Berry.

<i>Shrub</i>	5 F.
<i>Racemes</i>	simple, lateral, alternate, numerous, bracteate.
— <i>Peduncle</i>	(axis) many-flowered.
— <i>Pedicels</i>	twice length of flower.
<i>Calyx</i>	(segments) obtuse-angular.
<i>Corol</i>	cylindric, subcoarctate. (P. W. W.)
<i>Shrub</i>	diffuse, 5 F.
— <i>Branchlets</i>	(epidermis,) green, glab. white-speckled.
<i>Petiole</i>	0.
<i>Leaves</i>	coriaceous, alternate, sessile.
— <i>Figure</i>	elliptic.
— <i>Base</i>	rather tapered.
— <i>Apex</i>	obtuse-angular.
— <i>Margin</i>	intire, (here and there a minute denticle.)
— <i>Surface</i>	green, glab.
— <i>Axis</i>	solitarily haired.
— <i>Subface</i>	paler.
— <i>Parenchyma</i>	glab.
— <i>Axis</i>	" , elevated.
— <i>Ramific</i>	" , fainter, alternate.
<i>Inflorescence</i>	a bracteate, 7-flowered raceme.
— <i>Anthopode</i>	branched.
— <i>Peduncle</i>	(axis) covered with thick white hairs.
— <i>Pedicels</i>	glab.
<i>Bracteas</i>	(podophyls or small leaves) at base of each peduncle, elliptic-lanceolate, intire, acute, ciliate. (pedicelar) a little above the base of each and similar to the others.
<i>Calyx</i>	monosepalous, green, glab. 5-fid.
— <i>Tube</i>	very short.
— <i>Segments</i>	obtuse-angular.
— <i>Sinus</i>	acute.
— <i>Sides</i>	excurved, intire.
— <i>Apices</i>	naked.
<i>Corol</i>	monopetalous, white, subpolygonous, a little coarctate at mouth, 5-dentate.
— <i>Tube</i>	subcylindric.
— <i>Dents</i>	obtuse, reflected.
— <i>Sinus</i>	acute.
— <i>Sides</i>	excurved.
<i>Stamens</i>	10, shorter than corol and originating at its base, united in a membranous tube!

— Filaments . . .	green, short, flat, hairy.
— Anthers . . .	oblong, 2-lobed.
— Lobes . . .	long-horned! with pervious apices.
Pistil . . .	= length of stamens.
— Ovary . . .	adhering.
— Style . . .	subulate.
— Stigma . . .	simple, flat, projecting.
Berry . . .	(acrosarc) inferior, globular, black-purple, crowned by persistent calyx.
— Cells . . .	4, many-seeded.
— Seeds . . .	yellow-brown, reticulated, with concave inter- stices!
— Episperm . .	crustaceous.
Floration . . .	19th June, 1823.
Place . . .	Arboretum, Kew.
Country . . .	North America.
Dissection . . .	1. calyx and pistil. 2. united stamens spread open. 3. a stamen separated. 4. a raceme of berries, (acrosarcs.)
Observation . .	This species has, I have no doubt, been confound- ed with <i>Corymbosum</i> , but from the extreme glabry of the leaves and other parts, I have always considered it a distinct species, and now venture to publish it as such.





VACCINIUM GRANDIFLORUM.

Large-flowered Whortle-Berry.

Raceme	terminal, 3—4-flowered.
— Pedicel	= length of flower.
Flowers	large.
Corol	cylindric, subcoarctate.
Leaves	fascicled, lanceolate, acute, mucronate, finely serrulate.
— Surface	subrugose, glab.
— Ramifications	level with parenchyma. (P. W. W.).
Shrub	low, spreading, bushy, 1½ F.
— Branches	cylindric.
— Epidermis	green, glab. covered with glaucous spots.
Petiole	0.
Leaves	in alternate bundles, thickish, arising from scaly-based spurs.
— Figure	lanceolate.
— Base	tapered.
— Apex	acute-angular, mucronate.
— Margin	very finely serrulate.
— Serrulations	attenuated into long subulate points.
— Surface	glab. minutely blistered, (subrugose.)
— Subface	
— Parenchyma	glab. roughish, (uneven.)
— Axis	subprominent, solitarily flesh-haired.
— Ramifications	level with or sunk below the parenchyma!
Inflorescence	a 3—4-flowered, leafy, terminal raceme.
— Anthopode	ramose.
— Peduncle	glab. green.
— Pedicel	" , about = length of flower.
Bracteas	(podophylls) leaf-like, at base and on each pedicel.
Calyx	monosepalous, glab. glaucous-green, open, ventricose, 5-fid.
— Tube	very short.
— Segments	obtuse-angular, each with an elevated nerve running up the middle.
— Sinus	obtuse-angular.
— Sides	subexcurved.
— Apices	callous.
Corol	very large! in proportion to the plant, monopetalous, white, scarcely contracted at mouth, 5-dentate.
— Tube	cylindric.
— Dents	short, obtuse-angular, subinflected.
— Sinus	obtuse.
— Sides	excurved.

— Apices	blunt.
Stamens	10, shorter than corol, united in a tube from just below the anthers.
— Filaments	short, flat, ciliated at edges.
— Anthers	brown, = length of tube of filaments, 2-lobed.
— Lobes	adnate, each with a long horn ! pervious at apex.
Pistil	shorter than corol.
— Ovary	inferior, hid in calyx.
— Style	cylindric, glab.
— Stigma	simple, flat, rather projecting.
Berry	(acrosarc) inferior, globular, crowned by persistent calyx.

Floration 4th July, 1823.

Place Arboretum, Kew.

Country North America.

Dissection A. 1. calyx and corol.
2. united stamens, spread open.
3. a stamen separated.
4. a berry (acrosarc.)

125 B. **VACCINIUM ELONGATUM.**
Twiggy Whortle-Berry.

Plant	3—4 F.
Branches	long, straight, shortly pubescent.
Leaves	subcoriaceous, elliptic-lanceolate, sessile, alternate, inequally and incumbently suberrate, gland-hair-tipt.
— Surface	glab. & subface (parenchyma) glab.
— Nerves	elevated, solitary, flesh-haired (hispid.)
Corymb	terminal, few-flowered, bracteate.
— Peduncles	very long ! (3-4 times length of flower) pubescent.
Corol	subcylindric, with reflected dents. (P. W. W.)
Observation	Herbification very handsome. I could only find an imperfectly flowering sprig. Is called <i>salicinum</i> in the gardens.

125 C. **VACCINIUM MINUTIFLORUM.**
Minute-flowered Whortle-Berry.

Plant	bushy, low, 1 F.
Leaves	subcoriaceous, numerous, alternate, sessile, rather bluntly suberrate, gland-tipt.
— Surface	(parenchyma) glab. (axis) elevated, pubescent at base (not flesh-haired) — Ramifications glab.
Racemes	terminal on the branches, few-flowered.
Corol	cylindric, with erect dents. (P. W. W.)

125 D. **VACCINIUM GLABRUM.**
Smooth Whortle-Berry.

Branches	glab.
Leaves	elliptic, quite entire, smooth both sides.
— Axis & Veins	very glab. rose-colour, the veins reticulated.
Spikes	lateral, alternate.
Bracteas	(podophyle) red, base-pedicelular, linear, acute.
Corol	complanate-cylindric. (P. W. W.)
Observation	A delicate, beautiful, perfectly smooth plant.

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ANDROMEDA SPECIOSA. (M. F.) V. GLAUCA.

Large-flowered, glaucous Andromeda.

Leaves	<i>oval, obtuse, mucronate, crenate (or serrate), reticulated-veiny.</i>
Branches	<i>floriferous, denudated, aggregate-raceme-flowered.</i>
Corol	<i>campanulate.</i>
Anthers	<i>(apices) geminate-4-aristate (Ph.)</i>
Shrub	<i>bushy, 2 F.</i>
— Stem &	<i>(epidermis) orange-brown, glab.</i>
— Branches	
— Branchlets	<i>green, glab. leaf-bearing.</i>
Petiole	<i>short, glab.</i>
Leaves	<i>alternate.</i>
— Figure	<i>elliptic.</i>
— Base	<i>a little tapered.</i>
— Apex	<i>obtuse.</i>
— Margin	<i>long-incumbent-subcerrulate.</i>
— Serrulations	<i>rather obsolete.</i>
— Sides	<i>(ext.) subrectilinear.</i>
— Vertices	<i>thickish.</i>
— Surface	<i>green, glab. reticulate-veiny.</i>
— Subface	<i>white-mealy-glaucous.</i>
— Axis	<i>rather prominent.</i>
— Ramifications	<i>obsolete.</i>
Inflorescence	<i>terminal and side-terminal, simple, of 3-4 flowered umbels.</i>
— Peduncles	<i>(rays) $\frac{2}{3}$ inch. glab. whitish.</i>
Calyx	<i>monosepalous, white, flat, 5-fid.</i>
— Segments	<i>semi-lanceolate.</i>
— Sinus	<i>obtuse-angular.</i>
— Sides	<i>subrectilinear, intire.</i>
— Apex	<i>obtuse, brown.</i>
Corol	<i>monopetalous, white, much longer than calyx, 5-fid.</i>
— Tube	<i>very short.</i>
— Segments	<i>obtuse, intire.</i>
— Sinus	<i>acute.</i>
— Sides	<i>rounded.</i>
— Apices	<i>obtuse.</i>
Stamens	<i>10, much shorter than corol, originating at its base.</i>
— Filaments	<i>very short with broad base.</i>
— Anthers	<i>= length of filaments, 2-lobed.</i>
— Lobes	<i>beaked, each 2-aristate.</i>

Pistil	
— Ovary	green, glab. 5-lobed.
— Style	filiform.
— Stigma	simple, scarcely apparent.
Florescence	24th June, 1823.
Place	Mr. James Lee's, Hammersmith.
Country	in Swamps, North Carolina.
Dissection	1. calyx and pistil.
	2. corol cut and laid open to show the stamens.
	3. a stamen separated.

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<p>...</p>	<p>...</p>
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LYNCEA CAPREARIFOLIA



LYONIA CAPREÆFOLIA.

Sallow-leaved Andromeda.

Inflorescence	<i>racemes and corymbs mixed, lateral, leafy.</i>
Corol	<i>subsericeous, globular, coarctate.</i>
Anthers	<i>ecornute.</i>
Leaves	<i>coriaceous, alternate, elliptic, short-acuminate, scabrous-suberrulate.</i>
Subface	<i>(parenchyma and axis) sprinkled with short, fleshy hairs. (P. W. W.)</i>
Shrub	<i>upright, 2 F.</i>
— Branches	<i>stiff.</i>
— Epidermis	<i>ruddy brown, glab.</i>
Petiole	<i>thick, short, sparsed with brown adpressed hairs, and a pointed oblong bud in the axilla.</i>
Leaves	<i>coriaceous, alternate, on the shoots.</i>
— Figure	<i>elliptic, 1½—2, 3½ 1½ inch.</i>
— Base	<i>rather narrowed.</i>
— Apex	<i>short-acuminate.</i>
— Margin	<i>scabrous-suberrulate.</i>
— Surface	<i>dark green, shining, glab.</i>
— Subface	<i>" } sprinkled with yellow, short, flesh</i>
— Axis	<i>prominent, } hairs.</i>
— Ramifications	<i>faint and vanishing.</i>
Inflorescence	<i>in lateral, stiff, alternate, 2-inch long, leafy, 1-sided racemes, intermixed with short, 4—5-flowered corymbs.</i>
— Anthopode	<i>ramose.</i>
— Peduncle	<i>2½-inch, } sparsed with short</i>
— Pedicels	<i>white, short, thicker upwards, } brown atoms.</i>
Bracteas	<i>(podophylls) small, consimilar to leaves on the peduncles.</i>
Calyx	<i>monosepalous, short, spreading, white, strewed with brown atoms, 5-fid.</i>
Segments	<i>acute.</i>
— Sinus	<i>short, obtuse-angular.</i>
— Apices	<i>" , acuminate.</i>
Corol	<i>monopetalous, white, subsericeous ! globular, coarctate.</i>
— Tube	<i>obtusely 6—7-ridge-furrowed.</i>
— Mouth	<i>6—7-dentate.</i>
— Dents	<i>reflected, very shortly obtuse-angular.</i>
— Sinus	<i>acute.</i>
— Sides	<i>excurved.</i>

Stamens	10, shorter than corol.
— Filaments	crooked, flat, with ciliated margins.
— Anthers	oblong, basifixt, 2-lobed.
— Lobes	adnate, naked! (ecornute) apertous at apex.
Pistil	
— Ovary	superior, depressed, (lower than broad) sub10-lobed, sericeous, with 10 star-like excavations round base of style.
— Style	glab. short, thick.
— Stigma	simple, (O apparent) only the clammy apex of style.
Floration	5th July, 1823.
Place	Mr. James Lee's, Hammersmith.
Country	North America.
Dissection . . .	1. calyx and corol. 2. " pistil. 3. a stamen, front view. 4. " , profile.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific information required.

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LYONIA MULTIFLORA.

Many-flowered Andromeda.

Raceme	compound, terminal, crowded-flowered.
Anthems	ecornate.
Leaves	narrow-lanceolate.
— Margin	scabrous-denticulate.
— Surface	sparsed with hair-like atoms. (P. W. W.)
— Axis & Ramif. }	
Shrub	erect, 2 F.
— Branches	(epidermis) ruddy-brown. glab.
Petiole	short, sparsed with brown, adpress, hair-like atoms.
Leaves	1 inch $\frac{3}{4}$, alternate on the shoots.
— Figure	narrow, lanceolate.
— Base	tapered.
— Apex	acute.
— Margin	subscabrous, (scarcely denticulate.)
— Surface	green, shining, strewed with solitary, very short, gland-hairs.
— Subface	paler.
— Axis	rather prominent.
— Ramifications	level with parenchyma. } sparsed with short brown hair-like atoms.
Inflorescence	a compound terminal raceme, with about 16 alternate crowded-flowered ramifications.
— Anthopode	twice branched.
— Axis	(continuation of stem) ruddy-brown, glab.
— Peduncles	1½-2 inch, green, pubescent, leafy, bearing alternate, small, 3-6-flowered corymbs, (each about 20-flowered.)
— Pedicels	longer than flowers, sparsed with short, gland-hairs.
Bracteen	(podophyls) at branchings of corymbs, small, brown, scarious, pointed.
Calyx	monosepalous, covered with short, brown, glands, 5-fid.
— Segments	acute-angular.
— Sinus	"
— Sides	rectilinear.
— Apex	acute.
Corol.	monopetalous, globular, sericeous! obtusely sub-ridged-furrowed, coarctate.
— Mouth	5-dentate.
— Dents	short, obtuse-angled, reflected.
— Sinus	acute.
Stamens	10, shorter than corol.

— Filaments	white, crooked, flat, sericeous.
— Anthers. . . .	oblong, 2-lobed, fixed a little above the base.
— Lobes. . . .	oblong, adnate, apertous at apex (ecornute.)
Pistil	
— Ovary	green, whitely sericeous, rather flat, sublobed.
— Style. . . .	shortish, thick, cylindric, taper-based.
— Stigma	simple, scarcely projecting, convex, spongy.
Floration	5th July, 1823.
Place	Mr. James Lee's, Hammersmith.
Country. . . .	North America.
Dissection	1. calyx and corol. 2. „ and pistil. 3. stamen, profile. 4. „ , front view.
Observation. . . .	<i>Lyonia salicifolia</i> , (D. B. t. 38) <i>capreaefolia</i> , (D. B. t. 127) and this species are probably only strong varieties of <i>paniculata</i> , (D. B. t. 87) but the differences are so prominent as to induce me to separate them as distinct species. They are all very handsome and rather rare in the nurseries; the two latter I have no where seen but at Mr. Lee's.





1847. 12.

Abby Z. A. Smith, May 1846.

W. H. A. 12.

STYRAX GRANDIFOLIUM. (W.)

Great-leaved Storax.

<i>Leaves</i>	<i>broad-ovate, acuminate.</i>
— <i>Subface</i>	<i>tomentose.</i>
<i>Racemes</i>	<i>multiflorous, elongate.</i>
— <i>Peduncle</i>	<i>inferior, axillar, solitary, 1-flowered. (Ph.)</i>
<i>Shrub</i>	<i>handsome, spreading, 8—10 F.</i>
— <i>Branches</i>	<i>pale-brown, glab.</i>
— <i>Bark</i>	<i>crackt.</i>
— <i>Branchlets</i>	<i>herbaceous, scaly-pubescent.</i>
<i>Petiole</i>	<i>very short.</i>
<i>Leaves</i>	<i>alternating to the end of the shoots.</i>
— <i>Figure</i>	<i>obovate.</i>
— <i>Base</i>	<i>tapered.</i>
— <i>Apex</i>	<i>acute-angular (and subacuminate.)</i>
— <i>Margin</i>	<i>scarcely denticulate.</i>
— <i>Denticles</i>	<i>callous-tipt.</i>
— <i>Surface</i>	<i>glab.</i>
— <i>Subface.</i>	<i>a little paler.</i>
— <i>Parenchyma</i>	} all pubescent.
— <i>Axis</i>	
— <i>Ramifications</i>	
<i>Inflorescence</i>	<i>a one-sided, leafy, supra-axillary raceme.</i>
— <i>Peduncle</i>	<i>scaly-pubescent, 2-inch.</i>
— <i>Pedicel</i>	<i>(1-flowered) = length of flower.</i>
<i>Bracteas</i>	<i>(podophyls) 2 at base of each pedicel, small, pubescent, (hair-tufted.)</i>
<i>Calyx</i>	<i>monosepalous, pubescent, inequally 5-dentate.</i>
— <i>Tube</i>	<i>long.</i>
— <i>Dents</i>	<i>short, jagged, acute.</i>
— <i>Sinus.</i>	<i>obtuse.</i>
<i>Corol</i>	<i>monopetalous, 5-fid.</i>
— <i>Segments</i>	<i>semilanceolate.</i>
— <i>Sinus.</i>	<i>acute.</i>
— <i>Sides.</i>	<i>intire.</i>
— <i>Apices</i>	<i>obtuse-angular.</i>
<i>Stamens</i>	<i>10, united at base in a tube !</i>
— <i>Origin</i>	<i>at bottom of corol.</i>
— <i>Filaments</i>	<i>linear, sericeous at base.</i>
— <i>Anthers</i>	<i>very long ($\frac{1}{2}$ length of stamens) adnate whole length to inferior face of filaments, 2-lobed.</i>
— <i>Lobes.</i>	<i>adnate, linear, laterally apertous.</i>

Pistil	linear.
— Style	very simple, (only the slightly pubescent apex of style.)
— Stigma	
Floration	23rd June, 1823.
Place	T. Canham's, Esq, Twickenham.
Country	In Woods on the banks of Rivers, Virginia to Georgia.
Dissection	1. calyx laid open to shew the pistil. 2. corol spread „ stamens.





1880-1881.

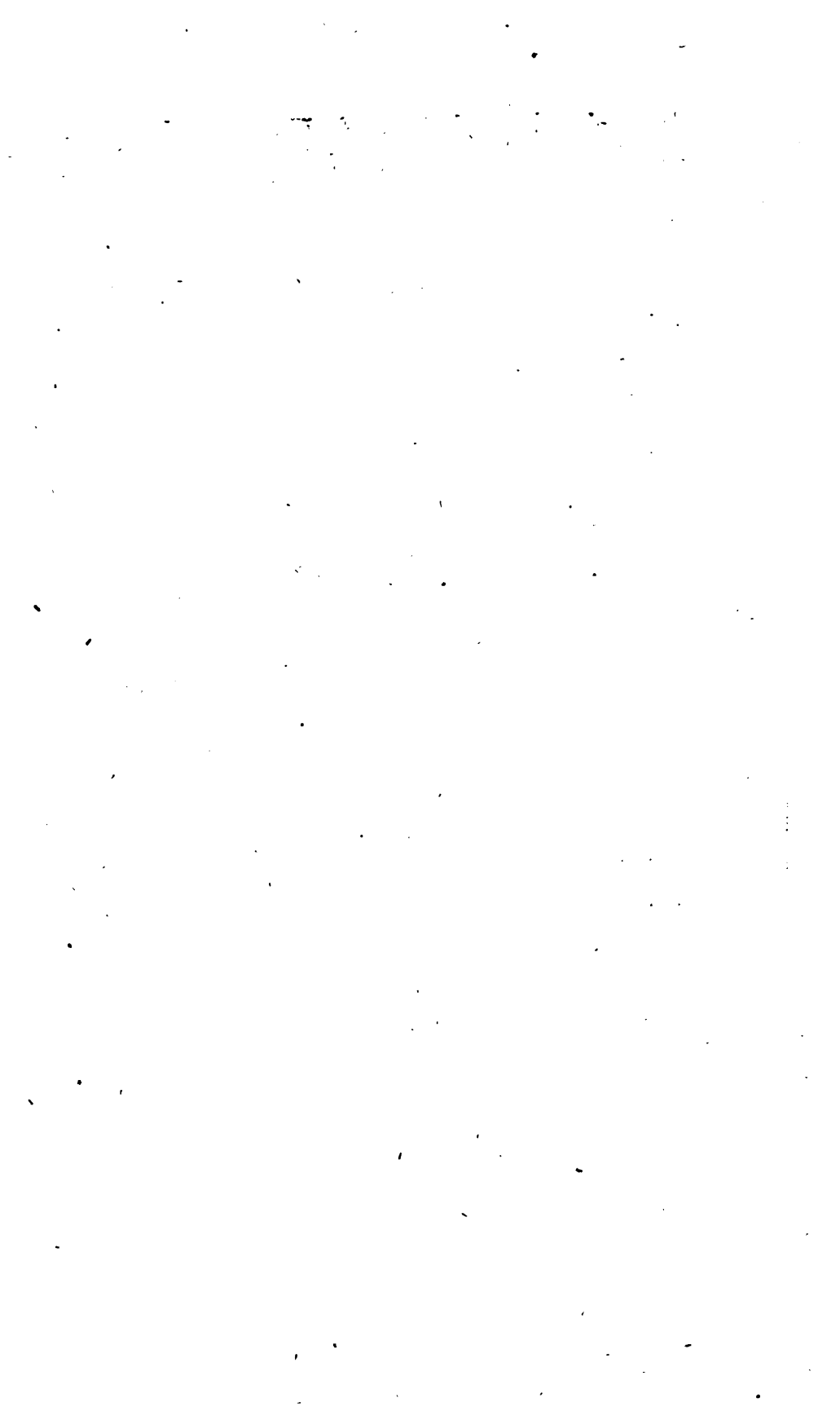
Bot. by J. A. A. Arch. Corn. h. U. May. 1882.

Walden.

NITRARIA SCHOBERI. (W.)

Thick-leaved Nitraria.

<i>Leaves</i>	<i>intire, obtuse.</i> (W.)
Shrub	low, 1½ F.
— Branches	numerous.
— Epidermis	ash-gray, glab.
— Branchlets	white-haired.
<i>Leaves</i>	fleshy, alternate, sessile.
— Margin	intire.
— Subface	rather sericeous.
Inflorescence	terminal, corymbose.
— Anthopode	branched.
— Peduncle & } — Pedicels. }	covered with short, white, gland-like hairs.
Bracteas	(podophyls) short, yellowish, on the pedicels.
Calyx	monosepalous, short, (=½ length of petals) white-gland-haired, 5-parted.
— Segments	semilanceolate.
— Sinus	obtuse.
— Sides	subincurved.
— Apices	acute.
Corol	5-petaled.
— Petals	white, lanceolate, intire, semitubular.
Stamens	15, shorter than petals.
— Origin	at base of ovary.
— Filaments	subulate.
— Anthers	oblong, basifixt.
— Lobes	adnate, 1-seamed.
Pistil	
— Ovary	conic, sericeous.
— Style	O.
— Stigma	simple, puckered.
Floration	18th June, 1823.
Place	Messrs. Loddiges & Sons', Hackney.
Country	Near the Caspian Sea and along the Wolga.
Dissection	1. bractea, calyx, pistil, and stamens. 2. a petal, to shew its concavity.





PRUNUS SEMPERFLORENS. (W.)

Ever-flowering Cherry.

<i>Flowers</i>	<i>racemose.</i>
<i>Racemes</i>	<i>leafy, pendulous.</i>
<i>Calyx</i>	<i>serrate.</i>
<i>Leaves</i>	<i>„ , ovate, glab.</i>
— <i>Base</i>	<i>glandular. (Ph.)</i>
<i>Shrub</i>	<i>upright, 7—8 F.</i>
— <i>Branches</i>	<i>hanging.</i>
— <i>Epidermis</i>	<i>brown, with paler spots.</i>
— <i>Branchlets</i>	<i>floriferous.</i>
— <i>Epidermis</i>	<i>green, glab.</i>
<i>Petiole</i>	<i>short, ($\frac{1}{2}$ length of leaf) grooved above, eglandular!</i>
<i>Leaves</i>	<i>coriaceous, alternate.</i>
— <i>Figure</i>	<i>elliptic.</i>
— <i>Base</i>	<i>obtuse-angular, with an orbicular gland on each side!</i>
— <i>Apex</i>	<i>shortly acuminate.</i>
— <i>Margin</i>	<i>inequally 2-serrate.</i>
— <i>Serratures</i>	<i>obtuse.</i>
— <i>Sides</i>	<i>excurved.</i>
— <i>Vertices</i>	<i>tip with a brown gland.</i>
— <i>Surface</i>	<i>dark green, glab.</i>
— <i>Subface</i>	
— <i>Parenchyma</i>	<i>glab.</i>
— <i>Axis</i>	<i>„ prominent.</i>
— <i>Ramifications</i>	<i>anastomosing.</i>
<i>Stipule</i>	<i>one on each side base of petiole, long, subulate, acutely serrate.</i>
<i>Inflorescence</i>	<i>a foliaceous raceme.</i>
— <i>Peduncle</i>	<i>2-3 inch, thickened upwards, glab. with a small leaf and 2 stipules at base.</i>
<i>Bractea</i>	<i>(podophyl) sometimes a very small one on the middle of peduncle, with a serrature on each margin.</i>
<i>Calyx</i>	<i>monosepalous, glab. 5-fid.</i>
— <i>Tube</i>	<i>short.</i>
— <i>Segments</i>	<i>reflected, semioblong.</i>
— <i>Sinus</i>	<i>obtuse.</i>
— <i>Sides</i>	<i>acutely serrate.</i>
— <i>Apices</i>	<i>obtuse.</i>

Corol.	white, 5-petaled.
— Petals	inversely cordate, inserted on mouth of calyx.
— Margin	intire.
Stamens	numerous, sub= length of petals.
— Origin	from mouth of calyx within the petals.
— Filaments	subulate.
— Anthers	orbicular, medifxt, 2-lobed.
— Lobes	adnate, 1-grooved.
Pistil	rather longer than stamens.
— Ovary	free, elliptic. glab.
— Style.	thicker upwards, " .
— Stigma	simple, flat, projecting, puckered.
Fruit	(drupe.) globular, red.
Floration	18th June, 1823.
Place	Messrs. Loddiges & Sons', Hackney.
Country	In the Western Parts of Virginia.
Dissection	l. a cherry (drupe.)





PYRUS ANGUSTIFOLIA. (W.)

Narrow-leaved Pear.

Leaves	<i>lanceolate-oblong, slightly crenate-dentate, shining.</i>
— Base.	<i>acute.</i>
Peduncle	<i>corymbose. (Ph.)</i>
Tree	<i>small, 7—8 F.</i>
— Branches	<i>(epidermis) lead-brown, glab.</i>
Petiole	<i>short, pubescent.</i>
Leaves	<i>in bundles on the spurs.</i>
— Figure	<i>linear-obovate.</i>
— Base.	<i>cuneate.</i>
— Apex	<i>obtuse.</i>
— Margin	<i>2-serrate.</i>
— Serratures	<i>obtuse-angular.</i>
— Sinus	<i>acute.</i>
— Sides	<i>excurved.</i>
— Apices	<i>thickish.</i>
— Surface	<i>glab, rather shining.</i>
— Subface.	
— Parenchyma	<i>glab.</i>
— Axis	<i>prominent, pubescent.</i>
— Ramifications	<i>fainter, „ near the axis.</i>
Inflorescence	<i>a many-flowered (10) corymb, sweet-scented.</i>
— Peduncle	<i>pubescent, reddish.</i>
— Pedicel	<i>„ , long, slender.</i>
Bractea	<i>(podophyl) one at base of each pedicel, subulate.</i>
Calyx	<i>monosepalous, 5-fid.</i>
— Tube.	<i>glab.</i>
— Segments	<i>cottony (inside densely.)</i>
— Sinus	<i>obtuse.</i>
— Sides	<i>subrectilinear, intire.</i>
— Apices	<i>acute.</i>
Corol	<i>pink and white, 5-petaled.</i>
— Petals	<i>round, concave, long-clawed.</i>
— Apices	<i>subinequally dentate.</i>
Stamens	<i>about 14, in=, shorter than corol.</i>
— Origin	<i>at base of segments of calyx.</i>
— Filaments	<i>glab. subulate.</i>
— Anthers	<i>oval, medifxt, 2-lobed.</i>
— Lobes	<i>oblong, adnate, laterally apertous.</i>
Pistil.	
— Ovary	<i>inferior.</i>

— Styles.	5, densely white-haired at base, thicker and glab. above.
— Stigma	simple, rather projecting, puckered, clammy.
Fruit.	(pome) small, $\frac{1}{3}$ inch, pyriform.
Floration	23rd June, 1823.
Place	T. Canham's, Esq. Twickenham.
Country	In low Woods of Carolina.
Dissection	1. a pear (pome.)



SPIRÆA ALBA. (D. R.)

White-flowered Spiræa.

<i>Leaves</i>	<i>lanceolate, acute, glab.</i>
— <i>Base</i>	<i>cuneate, intire.</i>
— <i>Apex</i>	<i>serrate.</i>
<i>Flowers</i>	<i>in terminal, compound racemes. (Hayne)</i>
<i>Shrub</i>	<i>weak, hanging, (decumbent.)</i>
— <i>Stem</i>	<i>4-ridged.</i>
— <i>Epidermis</i>	<i>glab. dark-brown.</i>
— <i>Branches</i>	<i>1-sided, slender, straight, 4-ridged.</i>
— <i>Epidermis</i>	<i>yellow-brown, glab.</i>
<i>Petiole</i>	<i>very short.</i>
<i>Leaves</i>	<i>soft, alternate.</i>
— <i>Figure</i>	<i>elliptic.</i>
— <i>Base</i>	<i>rather tapered (intire!)</i>
— <i>Apex</i>	<i>obtuse.</i>
— <i>Margin</i>	<i>from the middle to apex inequally dentate.</i>
— <i>Dents</i>	<i>short.</i>
— <i>Sinus</i>	<i>acute.</i>
— <i>Sides</i>	<i>excurved.</i>
— <i>Vertices</i>	<i>obtuse-angular.</i>
— <i>Surface</i>	<i>darkish-green, glab.</i>
— <i>Subface</i>	<i>subglaucous.</i>
— <i>Parenchyma</i>	<i>glab.</i>
— <i>Axis &</i>	<i>„ . elevated.</i>
— <i>Ramific.</i>	
— <i>Veins</i>	<i>reticulated.</i>
<i>Inflorescence</i>	<i>in compound racemes, terminal on the branches.</i>
— <i>Anthopode</i>	<i>ramose.</i>
— <i>Peduncle</i>	<i>(axis) glab.</i>
— <i>Pedicels</i>	<i>alternate, „ . branched.</i>
<i>Calyx</i>	<i>monosepalous, glab. with 3 white, parallel nerves, 5-parted.</i>
— <i>Tube</i>	<i>short.</i>
— <i>Segments</i>	<i>semilanceolate.</i>
— <i>Sinus</i>	<i>obtuse-angular.</i>
— <i>Sides</i>	<i>excurved, intire.</i>
— <i>Apices</i>	<i>acute-angular.</i>
<i>Corol</i>	<i>white, 5-petaled, twice length of calyx.</i>
— <i>Petals</i>	<i>orbicular, intire.</i>
<i>Stamens</i>	<i>numerous, longer than petals, flexuose.</i>
— <i>Origin</i>	<i>on month of calyx within the petals.</i>
— <i>Filaments</i>	<i>subulate, glab.</i>

— Anthers. . . .	globular, glab. basifixt.
— Lobes	adnate, sutured.
Pistil	
— Ovaries	5, oblong, glab.
— Styles	5, club'd.
— Stigma	simple, (the club of style.)
Floration	20th June, 1823.
Place	Arboretum, Kew.
Country.	North America.
Dissection	1. calyx and corol.
	2. corol cut open to shew the 5 pistils, and how the stamens are inserted.
	3. the 5 ovaries.
	4. an ovary separated.





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TILIA AMERICANA. (W.)

*Broad-leaved Lime Tree.**(Lime or Line Tree, Baswood, Spoonwood.)*

Leaves	<i>suborbiculate-cordate, abruptly acuminate, sharply serrate, subcoriaceous, glab.</i>
Petals	<i>(apices) truncate, crenate.</i>
Style	<i>sub= petals.</i>
Nut	<i>ovate, subcostate, (subglab.) (Ph.)</i>
Tree	40 F.
— Stem	erect, diameter $1\frac{1}{2}$ F.
— Epidermis	even, (not crackt.)
— Branches	cylindric, subpendulous.
— Epidermis	pale-brown, glab. warted.
— Branchlets	(annicular) green, glab.
Petiole	= $\frac{1}{2}$ length of leaf ($1\frac{1}{4}$ inch.)
Leaves	alternate.
— Figure	inequally suborbicular.
— Base	oblique-truncate-cordate.
— Apex	short-acuminate.
— Margin	inequally dentate.
— Dents	obtuse-angular.
— Sides	subincurved.
— Vertices	setaceous!
— Surface	green, glab.
— Subface	concolor.
— Pareuchyma	glab.
— Axis	strongly elevated ($\frac{2}{3}$)
— Ramifications	glab. $\left\{ \begin{array}{l} 1. \text{ midone (axis.)} \\ 2. \text{ (on the short side) 1, unilaterally ramified downwards.} \\ 3. \text{ (on long side) 2, both unilaterally ramified downwards,} \end{array} \right.$
Inflorescence	a compound corymb (about) 13-flowered.
— Anthopode	twice branched.
— Peduntle	(axis) = petiole, adnate $\frac{1}{2}$ way to the bractea, glab.
— „ (proper)	glab.
— Pedicel	twice length of flower.
Bractea	(podophyl) sessile, oblong, intire, obtuse, = length of corymb, axillary.
— Subface	very shortly gland-pubescent.
Calyx	5-sepaled, shortly sericeous, (sometimes seem grown together at base.)
— Sepals	semilanceolate, acute, intire.
Corol	5-petaled, yellow, not unguilate.
— Petals	concave, elliptic, intire.

Nectary	(paragone) 5-petaled, yellow, sub = corol-petals and lying on them, spatulate, intire.
Stamens	numerous, originating from outside of insertions of nectary and = to it.
— Filaments	(androphore?) 2-branched, each bearing one anther.
— Anthers	oblong, yellow, medifixed.
— Lobes	„, pointed, opening in the middle.
Pistil	sub = nectary.
— Ovary	white, shining, conic.
— Style	short, thick.
— Stigma	5-(short) lobed.
Fruit	(carcerula) as above.
Floration	21st July, 1823.
Place	Arboretum, Kew.
Country	Woods of Canada and Northern United States and on Mountains as far South as Carolina.
Dissection	1. calyx. 2. corol with interpetals. 3. nectary and insertion of stamens. 4. stamen. 5. pistil.





TILIA PUBESCENS. (W.)

Pubescent-leaved Lime Tree.

Leaves	with base truncate, oblique, acuminate, denticulate.
— Subface	pubescent.
Panicle	conferted-flowered.
Petals	emarginate.
Style	sub = petals.
Nut	globose, smooth. (Ph.)
Tree	30 F.
— Stem	erect.
— Branches	rather zig-zag.
— Branchlets	(annicular) green, glab.
Petiole	= $\frac{1}{3}$ length of leaf, (1 inch.)
Leaves	growing on the shoots and alternate,
— Figure	inequally subelliptic.
— Base	oblique-subtruncate-cordate.
— Apex	short-acuminate.
— Margin	subincumbently and remotely serrate.
— Serratures	obtuse-angular.
— Sinus	shallow, „
— Sides	(exterior) long, subexcurved.
— Vertices	fleshy, „
— Surface	bright-green, glab.
— Subface	green-glaucous.
— Parenchyma	strewed with star-like hair bundles (soft haired.)
— Axis	strongly elevated, stellate-pubescent.
— Ramifications	(one of the 2 lower) laterally branched downwards.
— \angle 's.	(axile)naked(the ramificatory)small-hair-bundled.
Inflorescence	a 11—16-flowered, compound corymb.
— Anthopode	twice branched, supra-axillar, longer than petiole, adnate, } way to bractea. { all scaly,
— Poduncle	short. } pubescent.
— Pedicels	rather longer than flowers.
Bractea	(podophyl) supra-axillar, bearing and = the corymb, linear-oblong, intire, obtuse.
— Surface	shining, glab. (or solitarily haired)
— Subface	pubescent.
Calyx	5-sepaled (or 5-sected, adhering a little at base) sericeous.
— Sepals	semilanceolate, intire, blunt-pointed.

Corol	5-petaled, rather longer than calyx.
— Petals	concave, long-elliptic, intire.
— Apices	emarginate-dentate.
Nectary	(paragone) 5-petaled.
— Petals	lanceolate, subspatulate, intire, emarginate.
Stamens	numerous, shorter than nectary, and inserted at sides and above the claws.
— Filaments	(androphore) 2-branched near the apex, each branch bearing 1 anther.
— Anthers	orbicular, medifixed, 2-lobed.
— Lobes	adnate, oblong, laterally opening.
Pistil	= nectary.
— Style	thick, cylindric, glab.
— Stigma	5-dentate.
Fruit	(carcerula) as above.
Floration	21st July, 1823.
Place	Arboretum, Kew.
Country	Banks of Rivers, Virginia to Georgia.
Dissection	1. calyx and corol. 2. " " , nectary and stamens. 3. a stamen. 4. pistil.
Observation.	I have noticed a smaller V. the leaves a yellower green.





RHUS CORIARIA. (W. E.)

Elm-leaved Sumach.

Leaves	pinnate.
— Leaflets	ovate-oblong, blunt, mucronate, obtusely serrate.
— Surface	scabrous.
— Subface	villous.
Petiole	(common) last internode membranous. (W. E.)
Shrub	4—5 F. spreading, bushy.
Stem	cylindric.
— Epidermis	pale-brown, warty, glab.
— Branches	
— Epidermis	
— Branchlets	cylindric.
— Epidermis	green, sparsed with white hairs.
Petiole	(common) 6-inch, grooved above, winged at last one or two intervals, long, white-haired. (foliolar) O.
Leaves	subcoriaceous, impair-pinnate, alternate.
— Leaflets	sessile $7\frac{1}{2}$ pair, varying opposite and alternate, $1\frac{1}{2}$ — $1\frac{3}{4}$ inch.
— Figure	elliptic.
— Base	round.
— Apex	obtuse-angular.
— Margin	largely and subequally dentate.
— Dents	about 23.
— Sinus	acute.
— Sides	excurved.
— Apices	obtuse-angular, naked.
— Surface	dark green, sparsed with short, fleshy hairs.
— Subface	paler, yellow-green.
— Parenchyma	elevated. } all sparsed with long hairs.
— Axis &	
— Ramific	
Inflorescence	a compound, terminal, $4\frac{1}{2}$ inch long raceme (or spike) with clustered flowers.
— Anthopode	biramose.
— Peduncle	(axis) pubescent.
— Ramifications	" , about 20.
— Pedicels	very short, (sub O.)
Calyx	monosepalous, 5-parted, sericeous, shorter than corol.
— Segments	elliptic.
— Sinus	acute.
— Sides	excurved.
— Apices	rounded.

Corol	green, 5-petaled, fixed under the phoron above interstices of calyx-segments.
— Petals	submembranous, rather orbicular, intire, with short claw and obtuse apex.
Phoron	thin, flat, obsoletely lobed.
Stamens	5, rather shorter than corol.
— Origin	at under edge of phoron, corresponding to middle of calyx-segments.
— Filaments	glab. flat, = anthers.
— Anthers	elliptic, 2-lobed, basifixt.
— Lobes	adnate, oblong, laterally opening.
Pistil	very short, in centre of phoron.
— Ovary	globular, sericeous.
— Styles	2, thickish.
— Stigma	simple, spongy, scarcely projecting.
Floration	1st September, 1823.
Place	Physic Garden, Chelsea.
Country	Southern Europe, Carinthea, Italy; also in Syria and Palestine.
Dissection	1. phoron, stamens, corol and calyx beneath. 2. " , ovary, styles and stigmas, with one stamen to shew its insertion under the edge of the phoron (pleurophoric.) 3. calyx, (outside) and pedicel.





LIGUSTRUM LUCIDUM. (H. K.)

Wax-Tree.

Leaves	ovate-oblong, acuminate.
— Surface	lucid.
Panicle	very much divaricated. (H. K.)
Shrub	upright, stiffish.
— Stem	} cylindric, glab. warted.
— Epidermis	
— Branches	
— Epidermis	
Petiole	short ($\frac{1}{2}$ inch) flattish above, glab.
Leaves	coriaceous, $3\frac{1}{2}$ & $1\frac{1}{2}$ inch, opposite.
— Figure	ovate-lanceolate.
— Base	subattenuated.
— Apex	shortly acuminate.
— Margin	intire.
— Surface	dark-green, levigated, shining, sparsed with minute, circular depressions.
— Subface	paler, yellow-green.
— Parenchyma	glab, sparsed with green, glaucous spots.
— Axis	" , prominent.
— Ramifications	few, obsolete (sunk.)
Inflorescence	a pyramidal, 4-rowed, terminal, cluster-flowered spike (7 inch.)
Anthopode	decompound, thrice-branched.
— Peduncle	(axis) green, glab, warty.
— " (proper)	opposite, in pairs, crossing each other so as to appear 4-rowed.
	(branches) in opposite cross pairs.
	(branchlets) short, $\frac{1}{4}$ inch.
— Pedicels	sub O.
Calyx	monosepalous, cylindric-tubular, glab, obsoletely 4-dentate. .
— Dents	obtuse, intire.
— Sinus	" .
— Sides	excurved.
— Apices	obtuse.
Corol	monopetalous, twice as long as calyx, coriaceous, white, glab. 4-parted.
— Segments	(parts) semilanceolate.
— Sinus	acute.
— Sides	excurved, intire.
— Apices	obtuse-angular.
Stamens	2, = petals.
— Origin	in the 2 opposite interstices of corol-segments.

— Filaments . . .	very short, thick, glab.
— Anthers . . .	orbicular, 2-lobed, medifixt.
— Lobes . . .	oblong, laterally opening.
Pistil . . .	= stamens.
— Ovary . . .	glab, round.
— Style . . .	short, flat, rather broader upwards.
— Stigma . . .	elliptic, flat.
Floration . . .	2nd September, 1823.
Place . . .	Mr. James Lee's, Hammersmith, (against a South Wall.)
Country . . .	China.
Dissection . . .	1. calyx. 2. corol and stamens, facial view. 3. " " , vertical " 4. pistil and receptacle.





GLEDITCHIA TRIACANTHOS. (W.) 3

Three-thorned Gleditchia.

Honey Locust, (the Pulp of the Pod.)

Spines	strong, crosswise-branched.
Leaves	linear-oblong.
Legume	very long, compressed. (Ph.) . . .
Tree	60—70 F.
— Stem	12 F. Diameter, 2 F.
— Bark	slightly crackt.
— Branches	(lower) pendant to the ground; cylindric, rather zig-zag.
— Epidermis	glab. shining, dark-brown, with obsolete warts.
— Spines	1½ inch, very sharp-pointed, with 2 opposite, short branches near the base.
Petiole	(common) 9 inch, thicker at base, channelled above, horizontally and densely pubescent. (foliolar) very short, pubescent.
Leaves	in alternate bundles of 3—4 each under the spines, abruptly pinnate.
— Leaflets	about 13 pair, opposite and alternate, 1½ inch long.
— Figure	irregularly elliptic-lanced
— Base	subovate.
— Apex	rather obtuse.
— Margin	remotely denticulate, ciliate.
— Denticles	incumbent, long.
— Sides	subrectilinear.
— Vertices	tip with small, dark-brown indurations.
— Surface	pale-green, short, flesh-haired.
— Subface	paler.
— Parenchyma	solitarily long-haired.
— Axis	prominent, " "
— Ramific.	obsolete.
Inflorescence	in 1½ inch spikes, 20—23 sessile-flowered, originating from base of leaf-bundles.
— Peduncle	densely pubescent.
— Pedicel	" , very short.
Perigone	monosepalous, scale-like, pubescent, inequally 7—8-fid. one or two segments interior, (not 3-sepaled and 3-petaled.)
— Segments	subelliptic, obtuse.
— Sinus	acute.

— Sides . . .	excurved.
— Apices . . .	subacute.
Stamens . . .	5, longer than perigone in a hair-tuft in its centre.
— Filaments . . .	pubescent at base and glab. upwards.
— Anthers . . .	round, medifixt, 2-lobed.
— Lobes . . .	oblong, laterally opening.
Floration . . .	24th July, 1823.
Place	Mrs. Simpson's, (late Ord's,) Purser's Cross, Wal- ham Green.
Country	Near the Sea Coast, Virginia to Carolina.
Dissection	♂ 1. perigone and 5 stamens. 2. a stamen.





AMORPHA CROCEALANATA.

Yellow-haired Bastard-Indigo.

<i>Plant</i>	<i>ferruginously woolly.</i>
<i>Spikes</i>	<i>simple, clustered.</i>
<i>Flowers</i>	<i>shortly pedice!d.</i>
<i>Calyx</i>	<i>5-dentate, (3 acute-angular and 2 roundly obtuse.)</i>
<i>Leaves</i>	<i>abruptly pinnate.</i>
— <i>Leaflets</i>	<i>ovate-lanceolate, obtuse, mucronate.</i>
— <i>Faces</i>	<i>densely pubescent. (P. W. W.)</i>
<i>Shrub</i>	<i>bushy, spreading, 5 F.</i>
— <i>Branches</i>	<i>cylindric, inequally and obtusely lirate.</i>
— <i>Epidermis</i>	<i>drab-colour, densely and shortly pubescent with gray hairs.</i>
— <i>Branchlets</i>	<i>straight, closely pubescent with orange-coloured-hairs.</i>
<i>Petiole</i>	<i>(common) 6½ inch, thicker at base, subangular, grooved above, densely and shortly pubescent. (foliolar) very short (½ inch) also „ .</i>
<i>Leaves</i>	<i>alternate, abruptly pinnate.</i>
— <i>Leaflets.</i>	<i>about 9 pair, alternate and opposite, sparsed with diaphanous points.</i>
— <i>Figure</i>	<i>ovate-lanceolate, 1½ ff' ½ inch.</i>
— <i>Base</i>	<i>ovate.</i>
— <i>Apex</i>	<i>obtuse, mucronate!</i>
— <i>Margin</i>	<i>intire (seems ciliate from its pubescence.)</i>
— <i>Surface</i>	<i>rather yellow-green, closely and shortly pubescent.</i>
— <i>Subface</i>	<i>paler.</i>
— <i>Parenchyma</i>	<i>} all covered with a dense, yellow, pubescence.</i>
— <i>Axis</i>	
— <i>Ramific.</i>	
<i>Inflorescence</i>	<i>in terminal, 4½ inch, pyramidal spikes, 3—4 from nearly the same point.</i>
— <i>Peduncle</i>	<i>(axis) densely pubescent.</i>
— <i>Pedicel</i>	<i>short, ½-length of calyx, „ .</i>
<i>Calyx</i>	<i>monosepalous, inversely conic, closely pubescent, inequally 5-dentate.</i>
— <i>Dents</i>	<i>3 acute-angular and 2 obtuse (rounded) with longitudinal nerves inside.</i>
<i>Corol</i>	<i>1-petaled! (no wings or keel!) dark-purple-blue, glab. concave with waved margin and yellow, grooved claw.</i>
<i>Stamens</i>	<i>10, all united in a tube, longer than petal.</i>
— <i>Filaments</i>	<i>slender, glab.</i>

— Anthers	oblong, modified, 2-lobed.
— Lobes	narrower, opening laterally.
Pistil	about = stamens.
— Ovary	elliptic, glab.
— Style	slender, pubescent.
— Stigma	simple, rather thicker than style.
Fruit	(legume) oblong-pyriform, oblique (apex 1-sided)
— Seeds	2, reniform.
— Placentation . .	near the apex.
Floration	26th June, 1823.
Place	Messrs. Whitley & Co.'s, Fulham.
Country	North America.
Dissection	1. calyx, corol and stamens. 2. " cut open to shew the form of the teeth. 3. the petal. 4. stamen. 5. pistil. 6. legume. 7. seed.
Observation	<p>This species much resembles and probably is the same as the one in the Herbarium of A. B. Lambert, Esq. collected by Nuttall, on the Banks of the Missouri, and marked fruticosa V. to which high opinion I cannot consent. It may have been overlooked by botanists for <i>pubescens</i> or <i>canescens</i>; but it differs from both, in the construction of the calyx and in other particulars.</p> <p>The species of this genus seem to want recharacterising, as the diagnoses of Pursh and Nuttall are at considerable variance.</p>





COLUTEA MEDIA. (W. E.)

Smaller Bladder-Senna.

Stem	arborescent.
Leaves	obcordate, glaucescent.
Peduncle	sub 6-flowered.
Legume	(apex) closed. (W. B.)
Shrub	busby, 9—10 F.
— Branches	pale-brown, shaggy.
— Branchlets	covered with long, white hairs.
— Epidermis	green.
Petiole	(common) 3-inch, covered with short, white, ad- presst hairs. (foliolar) very short, pubescent.
Leaves	alternate, impair-pinnate.
— Folioles	3½—5½ pair.
— Figure	orbicular, obcordate!
— Base	round.
— Apex	emarginate, with a short mucrone.
— Margin	intire.
— Surface	dark-green, glab.
— Subface	glaucous! densely covered with adpresst, white hairs.
— Axis	prominent at base, obliterating near apex, long, white-haired.
— Ramific.	scarcely apparent.
Stipules	1 at base of each common petiole, semilanceolate, scarious, intire, ciliate.
Inflorescence	in 2—3-flowered, supra-axillar, lateral racemes.
— Peduncle	hairy, nearly as long as common petiole.
— Pedicel	„, ½ inch.
Bracteas	(podophyls) here and there one on the pedicels, minute, brown.
Calyx	shortly pubescent, monosepalous, 5-dentate.
— Tube	short, rather hunched at base.
— Dents	in=, very acute.
— Sinus	obtuse.
— Sides	incurved, forming the sinus.
— Apices	long-subulate.
Corol	yellow, 4-petaled. (standard) reflected, = keel, suborbicular, emar- ginate, intire, deep-yellow, with parallel veins, and 2 oblong elevations at base,

	and a 2-fid. decoration surrounding them, with 2 small, oblong dots in the middle.
	(wings) 2, oblong, 1-sided, carbased, short-clawed, glab.
	(keel) 1-petaled, boat-form, with projecting stem.
	" , (claw) long, grooved.
Stamens	10, inclosed in the keel, 1 free and 9 united.
— Filaments	ascending, subulate.
— Anthers	small, oblong, emarginate.
Pistil	longer than stamens, ascending, revolute at apex, pubescent.
— Style	thickish, white-ciliate towards apex.
— Stigma	simple, yellow-pubescent beneath.
Fruit	(legume) inflated, closed at apex! and tipped with persistent style.
— Seed	reniform, polished.
— Placentation	on both sides a grooved, longitudinal suture.
— Podosperm	(umbilic cord) longer than seed, thick, excurved, densely gland-puckered.
Floration	4th July, 1823.
Place	Arboretum, Kew.
Country	Patria?
Observation	I believe this to be the plant meant by W. but I consider the characters given by him to be scarcely sufficient to constitute a species distinct from <i>arborescens</i> . Perhaps a hybrid plant.





HYPERICUM EMPETRIFOLIUM. (W.)

Crow-berry-leaved St. John's Wort.

<i>Flowers</i>	3-gynous.
<i>Corymb</i>	terminal.
<i>Style</i>	divaricate.
<i>Leaves</i>	verticillate-ternate, linear.
— <i>Margin</i>	revolute. (W.)
<i>Shrub</i>	erect, much branched, 9-inch.
— <i>Stem</i>	very short.
— <i>Epidermis</i>	reddish, glab.
— <i>Branches</i>	straight, numerous.
— <i>Epidermis</i>	pink, glab.
<i>Leaves</i>	sessile, $\frac{2}{3}$ -inch, verticillate in threes, the upper crossing the next lower 6-row-like, subcoriaceous, sparsed with diaphanous, round spots.
— <i>Figure</i>	spatulate-elliptic.
— <i>Base</i>	rather tapering.
— <i>Apex</i>	rounded.
— <i>Margin</i>	intire, subrevolute.
— <i>Surface</i>	glab. shining.
— <i>Subface</i>	„, glaucous.
— <i>Axis</i>	rather elevated.
— <i>Ramific. & Veins</i>	} O.
<i>Inflorescence</i>	flowers terminal, solitary or in 3's, corymb-like.
— <i>Peduncle</i>	green, glab.
— <i>Pedicels</i>	(2 outer) longer, (inner) very short.
<i>Involucre</i>	(ext. podophyl) 3-phyllous, linear-lanceolate, intire.
<i>Bractea</i>	(int. „) 1 at base and 2 near top of longer pedicels, linear-lanceolate.
<i>Calyx</i>	monosepalous, green, glab. $\frac{1}{2}$ length of corol, 5-fid.
— <i>Tube</i>	very short.
— <i>Segments</i>	lanceolate, 1-obtuse-ridged.
— <i>Sides</i>	excurved, set with 4—5, black, globular glands!
— <i>Apices</i>	obtuse.
<i>Corol</i>	6-petaled, inserted at base of calyx.
— <i>Petals</i>	yellow, concave, elliptic, intire.
<i>Stamens</i>	numerous, united a little at base (obscurely 3-phalanged) in =, inserted close under base of ovary.
— <i>Filaments</i>	setaceous, glab.

— Anthers	short, submedian, 2-lobed.
— Lobes	elliptic, adnate, laterally grooved .
Pistil	shorter than corol.
— Ovary	= length of style (seems 3-gonous) 3-obtuse-lobed, each lobe styliferous.
— Styles	3, divaricated! subulate.
— Stigmas	simple, red, minute, scarcely projecting.
Floration	17th August, 1823.
Country	Greece.
Place	Kew.
Dissection	1. calyx. 2. petal. 3, 3, 3. each a phalanx of stamens. 4. ovary and divaricated styles.

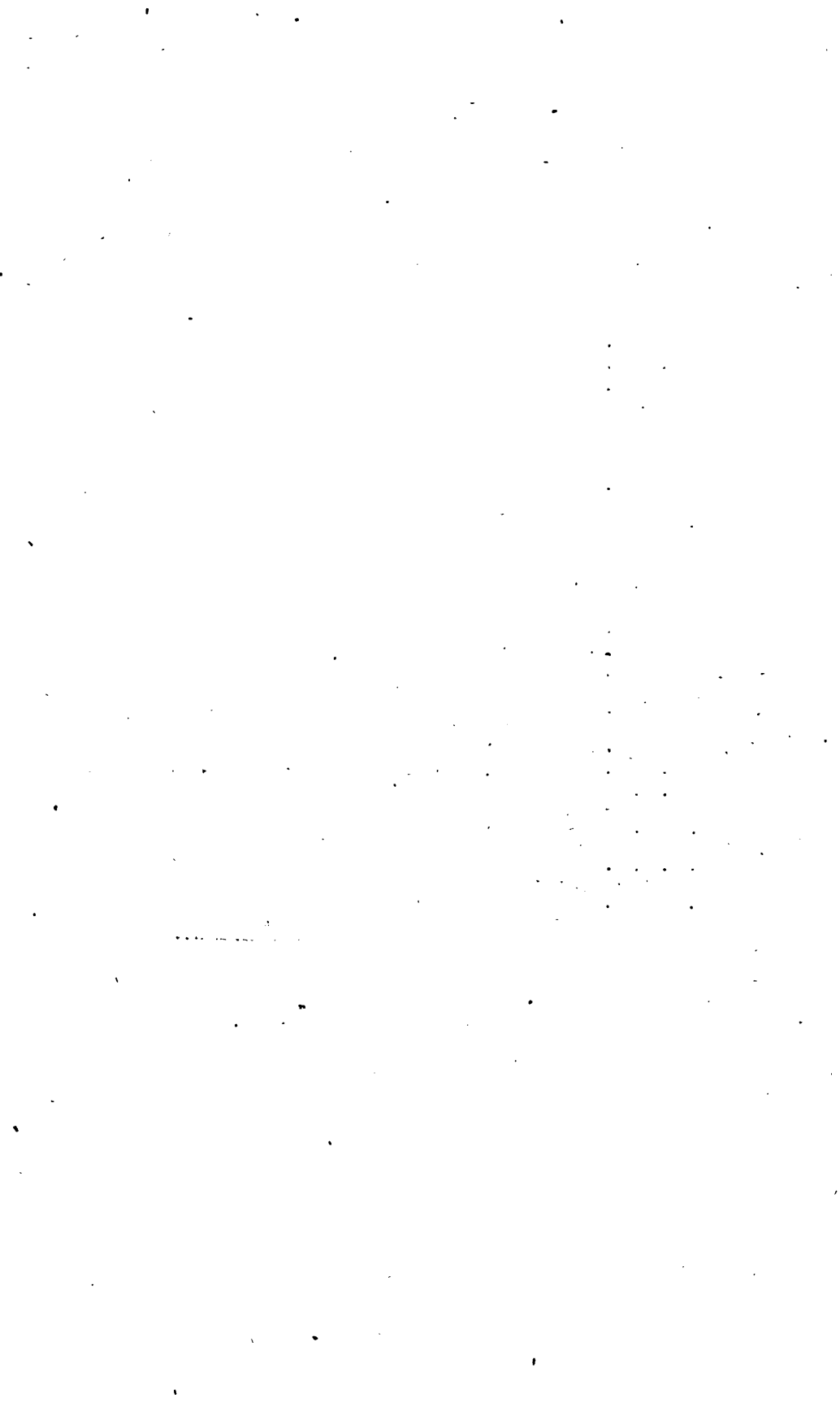




EPHEDRA MONOSTACHYA. (W.) ♂

Small Ephedra.

<i>Sheaths</i>	(of the joints) 2-dentate, obtuse.
<i>Aments</i>	solitary, sparsed (or opposite.)
<i>Peduncle</i>	longer than the ament. (W.)
<i>Shrub</i>	low, (6-inch,) stiff, erect, tufted, like equisetum.
— <i>Stem</i>	(epidermis) brown.
— <i>Branches</i>	tufted, jointed! sublerate-sulcate.
— <i>Epidermis</i>	green, glab.
<i>Leaf</i>	0, except the 2-fid sheath at each joint.
<i>Inflorescence</i>	ament short, about 6-flowered.
<i>Bractea</i>	(podophyl,) one (or two) orbicular, similar to the perigone.
<i>Perigone</i>	monosepalous, membranous, diaphanous, intire, 2-fid.
— <i>Segments</i>	obtuse.
— <i>Sides</i>	rounded.
— <i>Apices</i>	blunt.
<i>Androphore</i>	columnar, branching at top into filaments.
<i>Stamens</i>	8—10, ramifying from the androphore.
— <i>Filaments</i>	short.
— <i>Anthers</i>	pyriform, opening by a circular, terminal orifice.
<i>Floration</i>	18th June, 1823.
<i>Place</i>	Messrs. Loddiges & Sons', Hackney.
<i>Country</i>	Siberia, Hungary.
<i>Dissection</i>	1. a joint-sheath. ♂ 2. ament. 3. perigone, scale and stamens. 4. a columnar, branched androphore.





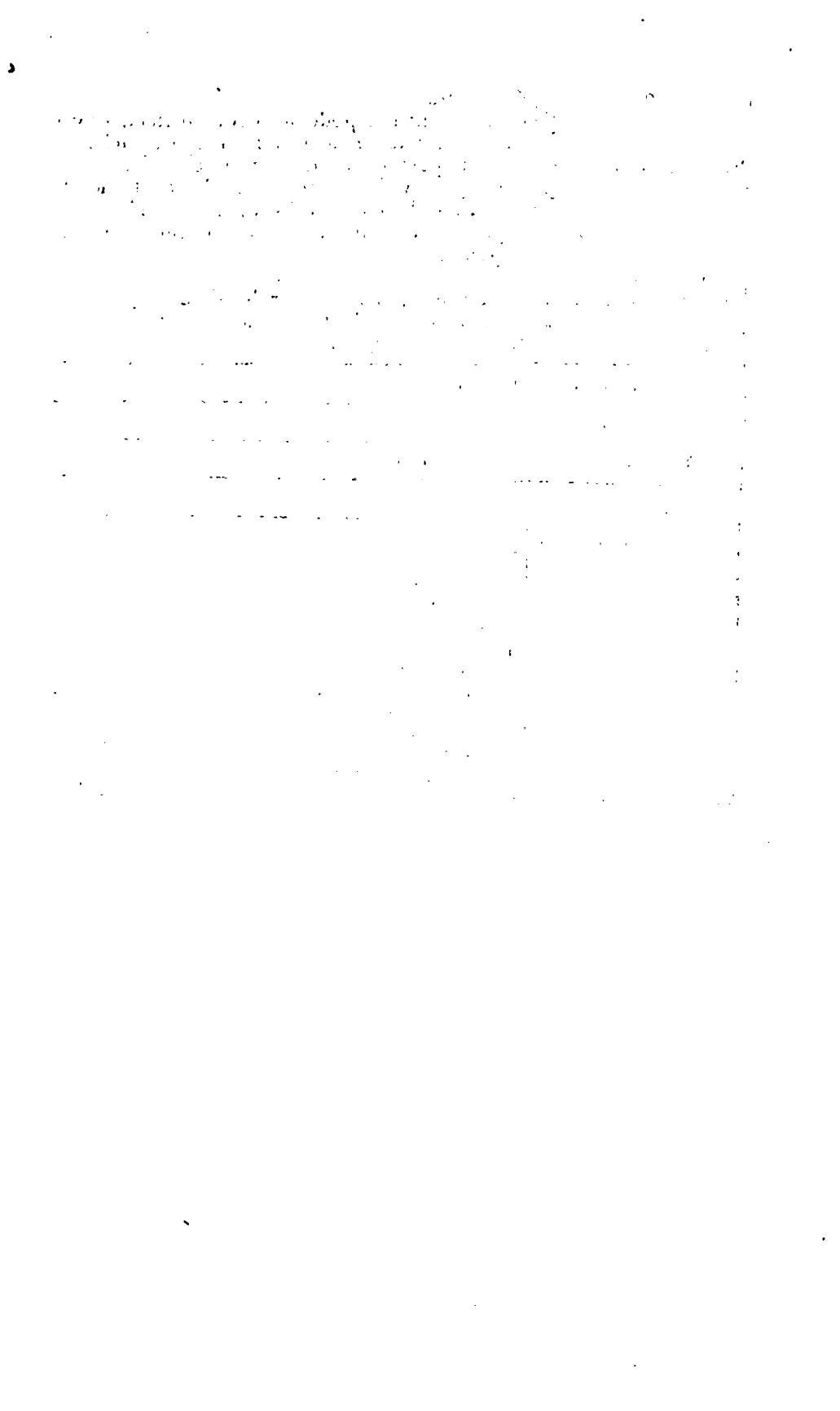


OSTRYA VULGARIS. (W.)

Hop Hornbeam.

<i>Strobile</i>	<i>ovate, pendulous.</i>
<i>Leaves</i>	" , <i>acute.</i>
<i>Buds</i>	<i>obtuse. (W.)</i>
<i>Tree</i>	large, bushy, 30—40 F.
<i>Stem</i>	short.
— <i>Diameter</i>	9-inch.
— <i>Epidermis</i>	olive, moss-like, subsericeous.
— <i>Branches</i>	numerous, divaricated, hanging.
— <i>Epidermis</i>	black-brown, glab. ruddy-warted.
— <i>Branchlets</i>	white-pubescent.
<i>Leaves</i>	alternate.
— <i>Figure</i>	ovate-short-lanceolate.
— <i>Base</i>	round.
— <i>Apex</i>	acute, (not acuminate.)
— <i>Margin</i>	subincised and inequally serrate.
— <i>Serratures</i>	obtusely and acute-angular.
— <i>Sinus</i>	angular.
— <i>Sides</i>	excurved.
— <i>Vertices</i>	acute, (not long-acuminate.)
— <i>Surface</i>	dark-green, sparsed with long, adpressed hairs.
— <i>Axis</i>	long-haired.
— <i>Subface</i>	paler.
— <i>Parenchyma</i>	glab.
— <i>Axis</i>	prominent, long-white-haired.
— <i>Ramifications</i>	" , alternate, closish, parallel, (each side) 13 branched, pubescent.
<i>Inflorescence</i>	♂ aments 2, approximated, from a short branched peduncle, slender, pendulous, 2¼—2½ inch. ♀ " about 20-flowered, alternate, sessile on the zig-zag, pubescent axis.
<i>Scale</i> ♂	(<i>Florification.</i>) (perigone) brown, sitting on the axis, subdeltoid, stamiferous at base.
<i>Stamens</i>	numerous, shorter than scale and fixed in a hair tuft at its base.
— <i>Filaments</i>	O.
— <i>Anthers</i>	round, 2-lobed.
— <i>Lobes</i>	oblong, adnate, bursting at sides, pubescent at apex.

♀		(<i>Florification</i>)
Scale	}	(outer or exterior podophyl) ovate-deltoid, brown.
		(inner or interior amphanth) elliptic, puckered, white-pubescent, (densely at base) longitudinally nerved, inflated and closed at mouth, bearing the flower at its interior base!!
Perigone		superior, very small, sub. 4-denticulate, white-pubescent.
Pistil		
— Ovary		flask-shaped, glab. inferior, longitudinally striate.
— Style		about twice length of perigone.
— Stigmas		2, long, slender, brown.
Floration		Vernal.
Fructification. . .		Autumnal.
Place		Arboretum, Kew.
Country		South of Europe.
Dissection		♂
		1. ament.
		2. stameniferous scale.
		3. a stamen.
		♀
		4. ament.
		5. outer scale.
		6. inner „ cut open to shew the site of the inferior ovary.
Observation . . .		I have noticed a variety with subcordate leaves and rounder, shorter ♀ aments.





BETULA LENTA. (W.)

*Soft Birch.**(Mountain Mahogany, Black Birch, Cherry Birch, Sweet Birch.)*

<i>Leaves</i>	<i>cordate-ovate, sharply serrate, acuminate.</i>
— <i>Subface</i>	<i>(nerves) pilose.</i>
<i>Petiole</i>	<i>pilose.</i>
<i>Ament</i>	<i>(♀)</i>
— <i>Scale</i>	<i>glab.</i>
— <i>Lobes</i>	<i>obtus., =, elevated-veiny. (Ph.)</i>
<i>Tree</i>	<i>20—30 F.</i>
<i>Stem</i>	<i>(leader) continuous to the apex.</i>
— <i>Diameter</i>	<i>9—10 inch.</i>
— <i>Bark</i>	<i>glab. brown.</i>
— <i>Branches</i>	<i>horizontal.</i>
— <i>Epidermis</i>	<i>glab. brown.</i>
<i>Petiole</i>	<i>short, with a few long, solitary hairs.</i>
<i>Leaves</i>	<i>in alternate pairs.</i>
— <i>Figure</i>	<i>subcordate-elliptic, ventricose in the middle.</i>
— <i>Base</i>	<i>small, cordate.</i>
— <i>Apex</i>	<i>acuminate.</i>
— <i>Margin</i>	<i>subincised, inequally serrate.</i>
— <i>Serratures</i>	{ <i>acute and obtuse-angled.</i>
— <i>Sinus</i>	
— <i>Sides</i>	<i>excurved.</i>
— <i>Vertexes</i>	<i>both shortly and long-acuminate.</i>
— <i>Surface</i>	<i>deep-green, glab.</i>
— <i>Axis</i>	<i>sunk, long-haired.</i>
— <i>Ramifications</i>	<i>"</i>
— <i>Subface</i>	<i>rather paler.</i>
— <i>Parenchyma</i>	<i>glab.</i>
— <i>Axis</i>	<i>strongly elevated, }</i>
— <i>Ramifications</i>	<i>parallel " , about 12 each side, } pubescent,</i>
— <i>Veins</i>	<i>with long, adpressed white hairs.</i>
<i>Inflorescence</i>	<i>♂ ament. cylindric, 2 inch, closely imbricated</i>
— <i>Pedicel</i>	<i>with flowers.</i>
— "	<i>(receptacle) very short, 1-flowered.</i>
	<i>♀ ament ovate, closely imbricated with flowers.</i>
<i>Scales</i>	<i>(Florification.)</i>
— <i>Sepals</i>	<i>(amphanths) 3 sepaled, 1-sided, 1-flowered</i>
— <i>Corol</i>	<i>(upper or shield) rhomboid, with bristly front</i>
— <i>Petals</i>	<i>margin.</i>
— <i>Stamens</i>	<i>(2 lower) under the shield, inequally orbicular.</i>
	<i>(perigone) 3-petaled, stameniferous in the centre.</i>
	<i>oblong, concave.</i>
	<i>about 12, short, in the centre of the flower.</i>

— Filaments . . .	short.
— Anthers. . . .	oblong, 2-lobed.
— Lobes	„ , narrow.
♀	(<i>Florification.</i>)
Scale (com.) . . .	(amphanth com.) monosepalous, bearing 3 naked flowers, 8-fid above and tapering with rectilinear margins to base.
— Segments . . .	longish, sub=, linear, obtuse.
— Sinus. . . .	obtuse.
— Margin	subciliate.
— Nerves	elevated! running from base and ramifying on the segments.
Pistil	
— Styles	2 (3—4) longer than ovary, brown, subulate, pubescent, (oc. bene armat.)
— Ovary	inferior.
	(<i>Fructification.</i>)
Fruit	(samara.)
— Capsule	elliptic, subpubescent, crowned by the persisting styles.
— Wing	membranous, longer (deeper) than pericarp, intire, orbicular.
Floration	Vernal.
Fruit.	8th July, 1823.
Place	Mrs. Simpson's, Purser's Cross, Walham-Green.
Country	Canada and through the Allegany Mountains to their termination in Georgia.
Dissection	1. a piece of the epidermis. ♂ 2. ament. 3. floriferous scale. 4. stamen. ♀ 5. ament-scale. 6. winged capsule (samara.)





RUSCUS RACEMOSUS. ♀

Alexandrian Laurel.

Racemes	terminal, bisexual. (W.)
Shrub	upright, 2—2½ F.
— Stem &	{ green, glab. shining.
— Branches	
Leaves	coriaceous, sessile, alternate.
— Base	subtaper-ovate.
— Apex	acute.
— Margin	intire.
— Surface	glab. shining.
— Subface	" " , concolor, closely pale-dotted.
— Axis	sub. O.
— Ramifications	obsolete, simple, parallel to the margin.
Stipules	one at base of each leaf, membranous, lanceolate, acute, brown-scarious.
Spines	O.
Inflorescence . . .	in 4—6-flowered, terminal racemes.
— Peduncle &	{ green, glab.
— Pedicels	
Bractees	(podophylls) 2, opposite, small, acute, on middle of peduncle and united round it.
Perigone	pyriform, constricted below, succulent, yellow, monosepalous.
— Mouth	rather closed, 6-dentate.
— Tube	short.
— Dents	obtuse.
— Sinus	acute.
— Sides	excurved.
Nectary	(paragone) white, membranous, terminating in a crown, originating from middle of perigone.
— Crown	a 12-hollow-lobed ring, pierced in the centre!
Pistil	rather longer than perigone.
— Ovary	orbicular, glab. inclosed in the nectary.
— Style	as long as perigone.
— Stigma	simple, sublobed.
Floration	26th June, 1823.
Place	Messrs. Whitley & Co.'s, Fulham.
Country	Portugal and the Archipelagic Islands.

Dissection	1. perigone. 2. nectary. 3. pistil.
Observation . . .	W. states the flower as bisexual; I could not find the 3 stamens which he mentions sitting on the nectary—they might be fallen off. I therefore consider my plant as unisexual and ♀.





DIOSPYROS VIRGINIANA. (W.)

*American Date-Plum.**(The Fruit is called Persimon.)*

<i>Leaves</i>	<i>ovate-oblong, acuminate, glabrous, reticulate-veiny.</i>
<i>Petiole</i>	<i>pubescent.</i>
<i>Buds</i>	<i>smooth. (Ph.)</i>
<i>Tree</i>	40 F. forming a roundish head.
— <i>Stem</i>	12 F. Diameter 1 F.
— <i>Bark</i>	strongly and deeply lozenge-dice-crackd.
— <i>Branches</i>	(lower) cylindric, pendant.
— <i>Epidermis</i>	glab. brown, warty.
— <i>Branchlets</i>	herbaceous, green.
— <i>Epidermis</i>	shortly pubescent.
<i>Petiole</i>	short, ($\frac{1}{3}$ inch,) flat above, white-haired-pubescent.
<i>Leaves</i>	subcoriaceous, alternate.
— <i>Margin</i>	intire, bordered with a narrow, pale membrane, solitarily ciliate.
— <i>Surface</i>	dark-green, shining, glab.
— <i>Axis</i>	flat, downy.
— <i>Subface</i>	much paler, (subglaucous.)
— <i>Parenchyma</i>	glab.
— <i>Axis</i>	" , prominent.
— <i>Ramifications</i>	" , fainter, anastomosing with the veins.
<i>Inflorescence</i>	3-flowered, supra-axillar.
— <i>Peduncle</i>	very short, ($\frac{1}{4}$ inch,) pubescent.
— <i>Pedicels</i>	= length of flowers, " .
<i>Calyx</i>	monosepalous, constricted at base, urceolate, 4-fid.
— <i>Tube</i>	very short.
— <i>Segments</i>	(fids) semilanceolate.
— <i>Sinus</i>	obtuse-angular.
— <i>Sides</i>	subrectilinear, ciliate.
— <i>Apices</i>	obtuse.
<i>Corol</i>	monopetalous, white, glab. ovate-elliptic, constricted near the mouth, 4-dentate.
— <i>Tube</i>	long-ovate.
— <i>Dents</i>	obtuse, imbricating ! closed.
— <i>Sides</i>	excurved.
— <i>Apices</i>	obtuse.
<i>Nectary</i>	(paragone) surrounding base of ovary, 8-dentate.
<i>Stamens</i>	16, (8-superposit on the other 8,) inserted near base of corol.
— <i>Filaments</i>	very short, flat, pubescent.

— Anthers . . .	long-lanceolate-acuminate, 2-lobed, basifixt, sericeous behind.
— Lobes . . .	adnate, laterally grooved.
Pistil . . .	short, conic.
— Ovary . . .	green, glab. ridged, attenuated into the style.
— Style . . .	short, 2-fid, one segment 3-dent.
— Stigmas . . .	2—3, acute.
Floration . . .	17th August, 1823.
Fructification . . .	not perfected.
Place . . .	Arboretum, Kew.
Country . . .	North America.
Dissection . . .	1. calyx. 2. corol. 3. " laid open to shew the superposed stamens. 4. a stamen. 5. pistil.





CELTIS OCCIDENTALIS. (W.)

American Nettle-Tree.

<i>Leaves</i>	<i>ovate, acuminate, equally serrate.</i>
— <i>Base.</i>	<i>in=.</i>
— <i>Surface.</i>	<i>scabrous.</i>
— <i>Subface.</i>	<i>hirtous.</i>
<i>Fruit</i>	<i>solitary. (Ph.)</i>
<i>Tree</i>	<i>large, fine, upright, with globular head, 40 F.</i>
<i>Stem</i>	<i>20 F.</i>
— <i>Diameter.</i>	<i>1½ F.</i>
— <i>Bark.</i>	<i>crackt, pale-brown.</i>
— <i>Branches</i>	<i>cylindric.</i>
— <i>Epidermis</i>	<i>brown, glab. sparsd with oblong warts.</i>
— <i>Branchlets</i>	<i>green, warty, pubescent.</i>
<i>Petiole</i>	<i>¾ inch, horizontally pubescent.</i>
<i>Leaf</i>	<i>thickish, (lower) 3 4f 1½ inch, (term.) 3½ inch, alternate.</i>
— <i>Figure</i>	<i>ovate, (and ovate-lanceolate.)</i>
— <i>Base.</i>	<i>in=, inner side protruded.</i>
— <i>Apex</i>	<i>(of lower) acute-angular, (of upper) acuminate.</i>
— <i>Margin</i>	<i>subequally serrate from a little above the base.</i>
— <i>Serratures</i>	<i>rather large, hamate.</i>
— <i>Sinus</i>	<i>obtuse.</i>
— <i>Sides</i>	<i>(ext.) excurved, (int.) incurved.</i>
— <i>Vertices</i>	<i>long, in-hooked, callous.</i>
— <i>Surface.</i>	<i>dark-green, shining, glaucous-dotted, with solitary scabrosities (scarcely scabrous to touch), held to the light beautifully reticulate.</i>
— <i>Axis &</i>	<i>} sunk.</i>
— <i>Ramifications</i>	
— <i>Subface.</i>	<i>yellow-green and dull.</i>
— <i>Parenchyma</i>	<i>glab.</i>
— <i>Axis</i>	<i>3 principal nerves from base, elevated and solitarily haired.</i>
— <i>Ramifications</i>	<i>few „, beautifully diaphanous, branching and anastomosing with veins.</i>
<i>Inflorescence</i>	<i>vernal, 1 (-2) flowered, supra-axillar.</i>
— <i>Peduncle</i>	<i>¾—1 inch, a little hairy at base.</i>
<i>Perigone.</i>	<i>6-parted, sericeous, membranous.</i>
— <i>Segments</i>	<i>} obtuse.</i>
— <i>Sinus.</i>	
— <i>Sides.</i>	<i>subrectilinear.</i>
— <i>Apices</i>	<i>obtuse.</i>
<i>Stamens.</i>	<i>6, rather shorter than perigone, inserted near its hair-tufted centre.</i>

— Filaments . . .	glab. short, tapering.
— Anthers. . . .	„, fixed a little above base of filaments, cordate, 2-lobed.
— Lobes	adnate.
Pistil	
— Ovary	elliptic.
— Stigmas. . . .	2, brownish, reflected, pubescent.
Drupe	glab. green, minutely punctate.
— Cell	one.
— Seed. . . .	1, white, reniform, apicularly placentated.
Place	Messrs. Whitley & Co.'s, Fulham.
Country. . . .	In Woods and near Rivers, Canada to Carolina.
Observation . . .	The tree from which the drawing was made is supposed the finest and largest of its species in the Kingdom.
Dissection	1. perigone (outside) and peduncle. 2. stamens taken from centre of perigone. 3. ovary and stigmas. 4. drupe, transversely sected. 5. seed. 6. bark of stem.





JUGLANS (CARYA) ALBA. (M: F.)

*White Walnut.**(Mocker Nut, White-heart Hickory or Common Hickory.)*

<i>Leaflets</i>	<i>sub 9, oblong-lanceolate, acuminate, slightly serrate.</i>
— <i>Subface</i>	<i>pubescent, scabrous.</i>
— <i>Impair</i>	<i>subpetiolate.</i>
<i>Ament</i>	<i>(♂) filiform, very long, tomentose.</i>
<i>Fruit</i>	<i>subglobose, smooth.</i>
— <i>Pericarp</i>	<i>very thick.</i>
— <i>Nut</i>	<i>sub 6-angular, with very thick, hard shell. (Ph.)</i>
<i>Tree</i>	<i>70—80 F.</i>
— <i>Stem</i>	<i>12 F. Diameter 1½ F.</i>
— <i>Bark</i>	<i>crackt into small areoles.</i>
— <i>Branches</i>	<i>cylindric, pendant.</i>
— <i>Epidermis</i>	<i>pale-brown, warty, glab.</i>
— <i>Expanse</i>	<i>10 F. (little in proportion to the height.)</i>
<i>Petiole</i>	<i>(common) 6-inch, pubescent, ridged above. (foliolar) sub 0, " "</i>
<i>Leaves</i>	<i>4—5, alternate; approximated on the top of the branches, impair-pinnate, increasing in size upwards.</i>
— <i>Leaflets</i>	<i>4½ pairs.</i>
— <i>Figure</i>	<i>obovate-lanceolate.</i>
— <i>Base</i>	<i>tapered, in= at apex.</i>
— <i>Apices</i>	<i>long-acuminate.</i>
— <i>Margin</i>	<i>subremote-denticulate.</i>
— <i>Denticles</i>	<i>in=, subincumbent.</i>
— <i>Sides</i>	<i>(ext.) subrectilinear.</i>
— <i>Vertices</i>	<i>long-blunt-acuminate.</i>
— <i>Surface</i>	<i>fine dark-green, glab.</i>
— <i>Subface</i>	<i>rather paler.</i>
— <i>Axis</i>	<i>prominent, pubescent at sides.</i>
— <i>Ramific.</i>	<i>about 25 on each side, parallel, pubescent.</i>
— <i>Veins</i>	<i>star-haired.</i>
<i>Inflorescence</i>	<i>♂ ament, slender, branched, 3½ inch. ♀ (no ament) flowers 2, sessile, alternate, terminal, brown-tomed.</i>
— <i>Peduncle</i>	<i>♂ slender, pubescent.</i>
— <i>Pedicel</i>	<i>short.</i>
<i>Scale</i>	<i>(♂ Flerification. monosepalous, 3-parted.</i>
— <i>Segments</i>	<i>lanceolate.</i>
— <i>Sinus</i>	<i>obtuse-angular.</i>

— Sides	ciliate.
— Apices	acute.
Stamens	4, very short, sitting in the centre of the scale.
— Filaments	sub 0.
— Anthers	orbicular, 2-lobed, pubescent at apex.
— Lobes	oblong, laterally opening. (? Florification.)
Ovary	oblong-conic, boldly 6-ridged-furrowed, sparsed with globular warts and yellow speckles.
— Style	0.
— Stigmas	2, long, reflected, imbricate with fleshy, scale-like appendages. (Fructification.)
Drupe	(trypa) ovate-globular, smooth, punctured.
— Epicarp	thick, opening at apex into 4 divisions.
— Nut	as above.
Floration	July.
Fruitification	September.
Place	Mrs. Simpson's, (late Ord's) Purser's Cross, Wal- ham-Green.
Country	In shady Forests, New England to Carolina, and throughout the Allegany Mountains.
Dissection	♂ 1. aments. 2. floret. 3. stamen separated. ♀ 4. two flowers. 5. drupe as the epicarp naturally opens at top. 6. nut.





THUJA ORIENTALIS. (W.)

Chinese Arbor-Vitæ.

Branchlets	2-edged.
Leaves	4-rowed-imbricate, ovate-rhomboid, furrowed in the middle.
Strobile	elliptic.
— Scale	(interior) obtuse, mucronate beneath the point! (W.)
Shrub	large, 20 F. thickly and closely tufted.
— Branches	arising from near the root, naked, glab. brown and olive.
— Branchlets	closely imbricated with persistent leaves.
Fronds	vertical, flat, multipinnate.
Leaves	boxed in 4's, constituting the frond.
— Apices	(2 facials) flat, rhomboid, longitudinally furrowed. (2 laterals) embracing those at base, subcarinate, with an obsolete furrow each side. obtuse-angular.
Ament	(♂ Inflorescence.) 1 line long, globular, about 8-flowered, terminal on the shoots.
— Peduncle	(anthopode) subsimple.
Florets	(♂ Florification.) sessile, in opposite cross pairs.
Perigone	subdeltoid, glab. intire, brown in the disk, antheriferous at base.
Stamens	3—4, subsessile, originating from base of perigone.
— Anthers	spheric, sericeous, inapertous.
Cone	(♀ Inflorescence, nascent.) (roset) 8 scaled, 2-serial. (♀ Florification.)
— Scales	(amphanths) { (1st series) — 4, each 2-floriferous at base. (2nd „) 4, two of which 2-floriferous at in-base, the other two (corpuscles) smaller, barren. (all brownish, glab. gelatinous.)
Flowers	naked, sessile.
Pistil	
— Ovaries	urceolate with pervious apices.
— Stigmas	the concave apices of ovaries.

Strobile	(♀ <i>Inflorescence mature.</i>) (roset) $\frac{1}{2}$ inch, elliptic, 6—8 amphanthod.
— Scales	(♀ <i>Fructification.</i>) (amphanths) woody, scarcely divisible when im- mature, 3-serial. <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="font-size: 4em; margin-right: 10px;">{</div> <div> (1st series) 2 lower, each bearing 2 nuts inside. (2nd series) 2, crosswise, a little above these each bearing one nut inside. (3rd series) 2 (or 4) smaller, cen- tral 2 of which (when 4 present) each 1 nutted. (all horned beneath the apex.) </div> </div>
Nuts	elliptic, glab.
Floration	17th February, 1824. Fruit, August, 1823.
Place	In most Gardens.
Country	China.
Dissection	♂ a. ament. b. scale (perigone) inside with 2, sessile anthers. c. " outside " 3, " " d. anther separated. ♀ e. roset spread open, shewing the 4 amphanths, 2 central corpuscles and the 2 ovaries at base of each amphanth. f. amphanth inside and 2 ovaries. g. corpuscle. (<i>Fructification.</i>) 1. amphanths and 2 central corpuscles. 2 & 3. " alone. 4. " and nuts. 5. nut separated. 7. cone transversely sected, nuts removed. 9. " , inner part " 6. central corpuscles. 8. cone (roset) laid open, shewing the nuts and central corpuscles. 10. apical view.





THUJA OCCIDENTALIS. (W.)

American Arbor Vita.

<i>Branchlets.</i>	2-edged.
<i>Leaves</i>	4-rowed, imbricate, ovate-rhomboid, adpress, naked, tuberculate.
<i>Strobile.</i>	obovate.
— <i>Scale</i>	(interior) truncate, gibbous below the apex. (Ph.)
<i>Shrub</i>	closely bushy, 15—20 F.
<i>Stem &</i>	{ (epidermis) glossy, glab. purple-brown.
— <i>Branches</i>	
— <i>Branchlets</i> . . .	flat, densely covered with persistent leaves, become feruginous-brown.
<i>Frond</i>	irregularly pinnate, 2-sided.
<i>Leaves</i>	shining green, in alternate pairs, (4-row-like) each double pair grooved (hoxed) into the next under. 2 united and opposite inface to inface, and 2 laterally crosswise, sheathing the base of former 2, collapsed, obtusely keeled, acute, and so on, series on series, composing the whole frond.
— <i>Figure</i>	inversely rhomboid, glab. with an elliptic elevation, (wart) in the middle of upper area.
<i>Ament</i>	(♂ <i>Inflorescence.</i>) small, globular, terminal, 1 line long, 6-flowered.
— <i>Scale</i>	(♂ <i>Florification.</i>) (perigone) subdeltoid, brown, convex outside.
<i>Filaments</i>	sub O.
— <i>Anthers.</i>	2 (4) globular, inapertous, at in-base of scales.
<i>Strobile.</i>	(♀ <i>Inflorescence, nascent.</i>) (roset) 2-serial, { outer 4-scaled (amphanth.)
— <i>Scale</i>	{ inner 4 „ narrower.
	(outer common or amphanth, com.) lanceolate, 2-flowered inside.
<i>Ovary</i>	(inner) barren.
— <i>Style.</i>	ovate at base, subdentate and hollow at apex.
— <i>Stigma.</i>	O.
<i>Cones</i>	O, except the apex of ovary.
	(♀ <i>Inflorescence, mature.</i>) (rosets) $\frac{1}{2}$ inch, scaly, oblong, sparsed on the branches of the fronds.

— Scales	(♀ <i>Fructification.</i>) (amphanths) 6, coriaceous, shortly sericeous, 4-serial. (1st series) 2 outer = $\frac{1}{2}$ length of ament, oblong, concave, obtuse, with hairy mar- gin, 2-nutted. (2nd series) crossing the former, and twice as long, consimilar, 1—2-nutted. (3rd series) on a row with the 2 outer, consimilar but nar- rower, 1-nutted. (4th series) a central, 3—4-divided corpuscle. " lobes irregularly grooved. " apex oblique and puckered.
Capsule.	(samara) lanceolate, glab.
— Wings	nearly as broad as capsule, exceeding its apex, cordate above and oblique at base.
— Seed.	1, filling the capsule.
Floration	4th May, 1824. Fruit, autumnal.
Place	In most Gardens.
Country.	Canada to the Mountains of Virginia and Carolina. Scarce in the Southern States.
Dissection	♂ 1. ament, natural size. 2. " , magnified. 3. scale and anthers. ♀ 4. roset of scales. 5. flower separated. 6. strobile, mature. 7. base-scales. 8. scale bearing the 2 samaras. 9. samara. 10. central corpuscles. 11. strobile, dry, persistent. 12. a short portion of frond to shew the position of leaves.





BETULA POPULIFOLIA.

Poplar-leaved Birch. (White Birch, Old Field Birch.)

<i>Leaves</i>	<i>deltoid, long-acuminate, inequally serrate, glab.</i>
<i>♀ Scale</i>	<i>(lateral lobes) subrotund.</i>
<i>Petiole</i>	<i>glab. (Ph.)</i>
<i>Tree</i>	40 F.
— <i>Stem.</i>	15 F. diameter 1½ F.
— <i>Epidermis</i> . . .	white.
— <i>Branches</i> . . .	slender, pendant.
— <i>Epidermis</i> . . .	brown, glab. warty.
<i>Petiole</i>	glab. grooved above, ½ length of leaf, 1 inch.
<i>Leaves</i>	on the branches in two's, from very short spurs, or alternate on the shoots.
— <i>Figure</i>	deltoid-long-acuminate.
— <i>Base.</i>	truncate.
— <i>Apex</i>	very long.
— <i>Margin</i>	incised.
— <i>Dents</i>	acute-angular, in=.
— <i>Sinus</i>	"
— <i>Sides</i>	excurved.
— <i>Vertices</i>	short-acuminate.
— <i>Surface.</i>	glab. dark, shining green.
— <i>Axis</i>	elevated!
— <i>Ramifications</i> . .	" , alternate, parallel.
— <i>Subface.</i>	paler green.
— <i>Parenchyma</i> . . .	glab.
— <i>Axis</i>	glab. only elevated a little towards base.
— <i>Ramifications</i> . .	alternate, parallel, level with parenchyma.
— <i>Veins</i>	reticulated.
<i>Aments</i>	(♂ <i>Inflorescence.</i>) cylindric, 2½ inch, in terminal, pendant pairs.
<i>Flowers.</i>	(♂ <i>Florification.</i>) numerous, shortly pedicel'd.
<i>Scale</i>	(amphanth) pedicel'd on the axis, flat behind, 3 parted at top, consisting of the cap (shield) and 2 other segments close below the cap, brown, jagged-ciliate.
<i>Perigone</i>	green, inserted on the pedicel below the scales, 3-parted.
— <i>Segments</i>	oblong, concave, ciliated.
<i>Stamens</i>	about 5 pair.
— <i>Filaments</i>	very short.
— <i>Anthers</i>	twinned, oblong, 2-lobed.
— <i>Lobes</i>	adnate, grooved.

Ament	(♀ <i>Inflorescence, nascent.</i>) single, axillar, cylindric, pedicel'd.
— Scale	(♀ <i>Florification.</i>) (common or amphanth, com.) 2-(3)-flowered, 3-lobed.
Flowers	numerous, sessile, naked.
Ovaries	smooth, flat, = length of capsule.
— Styles	2, long, flesh-coloured, persistent.
— Stigmas	continuation of styles.
Ament	(♀ <i>Inflorescence, mature.</i>) cylindric, shortish, $\frac{1}{4}$ — $\frac{3}{4}$ inch, single, intrafoliar.
— Peduncle	glab. = length of ament and $\frac{1}{4}$ length of petiole.
Scale	(♀ <i>Fructification.</i>) (common or amphanth com.) pubescent both sides,
— Segments	(middle) acute-angular.
— Margins	(laterals) obtuse, expanding.
Capsule	(of all) intire, ciliate.
— Wings	(samara) flat, elliptic, crowned by the 2 persistent, red styles, = length of capsule.
	membranous, diaphanous, each side semilunar, intire.
Floration	1st May, 1824. Fruit, June, 1823.
Place	Messrs. Loddiges & Sons', Hackney.
Country	In rocky Woods, Canada to Pennsylvania.
Dissection	♂ 1. ament. 2. amphanth (scale) and flower. 3. a twin stamen, separated. ♀ 4. ament. 5. common scale (amphanth com.) bearing 3, naked florets. 6. scale, adult. 7. samara (winged capsule.)





BETULA PAPYRACEA.

*Paper Birch.**(Canoe Birch.)*

<i>Leaves</i>	<i>ovate, acuminate, 2-serrate.</i>
— <i>Subface.</i>	<i>(veins) hirsute.</i>
<i>Petiole</i>	<i>glab.</i>
<i>Ament</i>	<i>(♂) pedunculate, nutant.</i>
— <i>Scale.</i>	<i>(lateral lobes) short, suborbicular. (Ph.)</i>
<i>Tree.</i>	<i>30 F.</i>
— <i>Stem.</i>	<i>10 F. diameter 1½ F.</i>
— <i>Epidermis</i>	<i>white.</i>
— <i>Branches</i>	<i>slender, hanging.</i>
— <i>Epidermis</i>	<i>dark-brown, glab. flat-warted.</i>
<i>Petiole</i>	<i>glab. = ½ length of leaf.</i>
<i>Leaves</i>	<i>in two's (or three's) alternate.</i>
— <i>Figure</i>	<i>ovate-elliptic-lanceolate.</i>
— <i>Base.</i>	<i>„ (in some subtruncate.)</i>
— <i>Apex</i>	<i>shortly acuminate.</i>
— <i>Margin</i>	<i>inequally serrate.</i>
— <i>Serratures</i>	<i>short.</i>
— <i>Sinus</i>	<i>acute.</i>
— <i>Sides</i>	<i>bow-form.</i>
— <i>Vertices</i>	<i>subobtus.</i>
— <i>Surface</i>	<i>glab. dark green.</i>
— <i>Subface.</i>	<i>„</i>
— <i>Axis</i>	<i>„, prominent.</i>
— <i>Ramifications</i> . .	<i>simple, alternate, parallel.</i>
— <i>∠s</i>	<i>pubescent.</i>
<i>Aments.</i>	<i>(♂ Inflorescence.)</i> <i>cylindric, 2½ inch, in terminal, pendant pairs.</i>
— <i>Scale.</i>	<i>(♂ Florification.)</i> <i>(common or amphanth com.) fixed to top of pedicel, lateral and composed of 3 parts, (scales.)</i> <i>(upper) horizontal, rhomboid, brown, ciliated.</i> <i>(2 laterals) under the cap also brown, jagged-ciliate.</i>
<i>Flowers.</i>	<i>numerous, shortly pedicel'd.</i>
<i>Perigone</i>	<i>sitting under the scales, 3-lobed, green.</i>
— <i>Segments</i>	<i>oblong, concave, ciliated.</i>
<i>Stamens</i>	<i>about 5-pair.</i>
— <i>Filaments</i>	<i>very short.</i>
— <i>Anthers</i>	<i>2-lobed.</i>
— <i>Lobes</i>	<i>oblong, laterally apertous.</i>
<i>Ament</i>	<i>(♀ Inflorescence, nascent.)</i> <i>single, ½ size of ♂, axillar, pedicel'd.</i>

— Scale	(♀ <i>Florification</i> .) (common or amphanth, com.) 3-lobed, 3-flowered.
Flowers	naked.
Ovaries	flat, winged, ciliate.
— Styles	2, reddish, excurved.
— Stigmas	scarcely apparent.
Ament	(♀ <i>Inflorescence, mature</i> .) cylindric, single, alternate, 1½ inch, intrafoliar.
— Peduncle	= length of petiole, glab.
— Scale	(♀ <i>Fructification</i> .) (amphanth, com.) spatulate, shortly pubescent inside, 3-lobed.
— Lobes	{ (midone) less, acute. (laterals) larger, rounded.
— Margin	
Capsule	(in all) ciliate.
— Wings	(samara) oval, pubescent. membranous, diaphanous, broad-crescent-shaped, subin=.
— Margin	intire.
— Cell	one:
— Seeds	2, oblong.
— Placentation	apical, pedant on a central column.
Floration	1st May, 1824. Fruit, autumnal.
Place	Mrs. Simpson's, Purser's Cross, Walham-Green.
Country	In the Forests of Canada, and to the Hudson's River.
Observation	W. erroneously calls the <i>Winged Capsule</i> the Seed.
Dissection	♂ 1. ament. 2. scales (amphanths) and flower. 3. a twin stamen, separated. ♀ 4. ament. 5. common scale (amphanths, com.) bearing three, naked florets. 6. adult scale. 7. samara (winged capsule.) 8. " , transversely sected to shew the seeds.





BETULA NIGRA. (W.)

Black Birch. (Red Birch.)

Leaves	<i>rhomboid-ovate, 2-serrate, acute.</i>
— Subface	<i>pubescent.</i>
— Base	<i>intire.</i>
Ament	(♀) <i>ovate.</i>
— Scale	<i>villose.</i>
— Segments	<i>linear! =.</i> (Ph.)
Tree	30 F.
— Stem	10 F., diameter 1 F.
— Epidermis	grey, (not white) shaggy! peeling.
— Branches	pendulous.
— Epidermis	dark brown, glab. warty.
Petiole	short, pubescent.
Leaves	alternate on the shoots.
— Figure	rhomboid! lanceolate.
— Base	obtuse-angular.
— Apex	acute-
— Margin	subincised, (strongly in the annular ones) inequally serrate.
— Serratures	subobtuse-angular.
— Sinus	(various) obtuse and acute.
— Sides	subrectilinear.
— Vertices	bluntish.
— Surface	green, sparsed with adpressed hairs.
— Subface	glab.
— Parenchyma	covered with golden spangles.
— Axis	prominent, pubescent.
— Ramifications	alternate, parallel, pubescent.
— Veins	reticulated.
Aments	(♂ <i>Inflorescence.</i>) cylindric, terminal, in pairs, 1 inch.
Ament	(♀ <i>Inflorescence, nascent.</i>) lateral from the leaf-buds, single, cylindric, pedicel'd, $\frac{1}{2}$ inch.
Scale	(♀ <i>Florification.</i>) (amphanth) 1-flowered! ovate, acute, pubescent.
Flowers	naked.
Ovaries	hairy.
— Styles	2, (3) pink, excurved, acute, persisting.
— Stigmas	only apices of styles.
Ament	(♀ <i>Inflorescence, mature.</i>) intrafolious, oblong, $\frac{1}{2}$ — $\frac{2}{3}$ inch.
— Peduncle	(axis) pubescent, closely imbricated with scales.

— Pedicels . . .	O.
Scale	(amphanth) exteriorly densely pubescent, (interiorly less so) intire, linear-lanceolate, obtuse, ciliate! or 2-3 lobed!
— Lobes	(laterals) $\frac{1}{2}$ length of mid-one, narrow, lanceolate, acute, ciliate.
Fruit.	(<i>Fructification.</i>) (samara) larger than scale! subcordate, flat, pubescent at apex.
— Wing	membranous, diaphanous, vanishing at apices, undulate, intire.
— Cells	2, each one-seeded.
Floration	Vernal. | Fruit, autumnal.
Place	Messrs. Whitley & Co.'s, Fulham.
Country.	On the Banks of Rivers, New Jersey to Carolina.
Dissection	♂ 1. ament. ♀ 2. ament. 3. flower. 4. " scale. 5. ament, mature. 6. scale. 7. samara. 8. " , transversely sected, placenta and seeds. 9. a piece of the bark.





BETULÀ FRUTICOSA. (W.)

*Shrubby Birch.**(Smooth Dwarf Birch. P. W. W.)*

<i>Leaves</i>	<i>subrotund-ovate, subequally serrate, glab.</i>
<i>Ament</i>	<i>♀ oblong. (W.)</i>
<i>Shrub</i>	low, 3—4 F. bushy, tufted.
— <i>Branches</i>	numerous, closely rebranched.
— <i>Epidermis</i>	brown, glab.
<i>Petiole</i>	short, rose-colored, solitarily haired.
<i>Leaves</i>	2—3 together on short spurs, numerous.
— <i>Figure</i>	obovate-cuneate.
— <i>Base.</i>	tapered into the petiole.
— <i>Apex</i>	obtuse, (round.)
— <i>Margiu.</i>	subequally obtuse-dentate.
— <i>Dents.</i>	obtuse (not obtuse-angular as in <i>B. pumila</i> .)
— <i>Sinus</i>	acute.
— <i>Sides</i>	excurved.
— <i>Vertices</i>	naked.
— <i>Surface</i>	dark-green, glab.
— <i>Axis</i>	solitarily long-haired.
— <i>Ramifications</i>	reticulate, anastomosing with veins.
— <i>Subface.</i>	glaucous.
— <i>Parenchyma</i>	glab. the areoles with minute glaucous spots.
— <i>Axis</i>	rose-color, little elevated, solitarily long-haired.
— <i>Ramifications</i>	level with parenchyma.
— <i>Veins</i>	reticulated.
<i>Ament</i>	(♂ <i>Inflorescence.</i>) cylindric, $\frac{3}{8}$ inch, imbricated with brown scales.
<i>Scale</i>	(♂ <i>Florification.</i>) (amphanth) 1-flowered, 3-phyllous. (") (upper or cap) brown, deltoid, jagged-ciliate. (") (2 under) circular, brown ciliate.
<i>Perigone</i>	3-parted, staminiiferous in its center.
— <i>Segments</i>	roundish.
<i>Stamens</i>	2 from each filament (androphore.)
— <i>Filaments</i>	very short.
— <i>Anthers.</i>	roundish, 2-lobed.
<i>Ament</i>	(♀ <i>Inflorescence, nascent.</i>) single, cylindric.
<i>Scale.</i>	(common or amphanth, com.) 2-3 flowered, obtuse-ly 3-lobed.
— <i>Lobes</i>	(laterals) short.
— <i>Margins.</i>	hairy (ciliated.)
<i>Flowers.</i>	naked.
<i>Ovaries</i>	flat, glab. with nascent diaphanous wings.

— Styles	2, subulate, reddish, apart at base, subsericeous, persistent, crowning the ovary.
— Stigmas.	apices of styles. (♀ <i>Inflorescence, mature.</i>)
Ament	cylindric-oblong, erect, solitary, $\frac{3}{4}$ inch.
— Peduncle	sub O.
— Scale	(amphanth) 3-lobed.
— Limb	shortly and abruptly attenuated into the claw.
— Margin	glab.
— Lobes	obtuse, ciliated (mid-one broader.) (<i>Fructification.</i>)
Fruit.	(samara) rather shorter than scale.
— Capsule.	flat, elliptic, sericeous.
— Wings	not exceeding the capsule, aggregatly orbicular.
— Margin	intire.
Floration	Vernal. | Fruit, autumnal.
Place	T. Canham's, Esq. Twickenham.
Country.	Bavaria, Siberia.
Dissection	♂ 1. ament. 2. scale and flower. 3. stamen, separated. ♀ 4. scale, bearing 3, naked flowers. 5. „ , mature. 6. samara, placenta and seeds.

154 A.	BETULA DAURICA. <i>Daurian Birch.</i>
Stem	red-brown, glab.
Branchlets	yellowish, shortly pubescent.
Petiole	short, glab.
Leaves	suborbicular, largely and rather equally dentate (a few small interposed dentic.)
— Dents & Sinus	obtuse-angular and excurved sides.
— Faces	glab.
— Base	round, intire.
— Apex	„

154 B.	BETULA SIBIRICA. <i>Siberian Birch.</i>
Stem	black-brown, } very shortly pubescent.
Branches	pale „ }
Leaves	suborbicular, lactescent-dentate.
— Dents.	rather acuminate, ciliate ! unequal.
— Sinus	acute.
— Subface	pubescent !
— Axis	„ , prominent.
— Ramifications	„ , 6 each side, alternate.





CUPRESSUS SEMPERVIRENS. (W.)

Common Cypress.

<i>Branchlets</i>	<i>4-angular.</i>
<i>Leaves</i>	<i>4-ranked, imbricate, obtuse, adpressed, convex.</i>
<i>Strobile</i>	<i>globose.</i>
— <i>Scales</i>	<i>muticate.</i>
<i>Branches</i>	<i>erect. (W.)</i>
<i>Tree</i>	<i>erect, 40 F.</i>
— <i>Stem</i>	<i>short.</i>
— <i>Branches</i>	<i>rather spreading.</i>
<i>Fronds</i>	<i>multipinnate, linear, subcylindric, very closely imbricated with leaves.</i>
— <i>Leaves</i>	<i>in cross pairs, thick, rhomboid, each pair standing $\frac{1}{2}$ leaf higher.</i>
— <i>Surface</i>	<i>glab. with a depressed line in the middle.</i>
<i>Ament</i>	(♂ <i>Inflorescence.</i>) <i>oblong, $1\frac{1}{2}$ eighth inch, 20-flowered, terminal.</i>
<i>Flowers</i>	(♂ <i>Florification.</i>) <i>opposite, short-pedicel'd.</i>
— <i>Scale</i>	(perigone) <i>subdeltoid, fixed $\frac{1}{2}$ middle to pedicel, concave inside, stamiferous at insertion.</i>
— <i>Margin</i>	<i>lacerated.</i>
<i>Stamens</i>	<i>2—4, inserted in middle of scale.</i>
— <i>Anthers</i>	<i>sessile, elliptic, inapertous.</i>
<i>Strobile</i>	(♀ <i>Inflorescence, nascent.</i>) <i>10 scaled (amphanth) 4, 4 & 2.</i>
<i>Scale</i>	(♀ <i>Florification.</i>) <i>(common or amphanth, com.) many flowered inside.</i>
<i>Flowers</i>	<i>naked.</i>
<i>Ovaries</i>	<i>globular, 2-beaked and apertous at apex.</i>
— <i>Stigmas</i>	<i>0, except beaks of ovaries.</i>
<i>Cone</i>	(♀ <i>Inflorescence, mature and Fructification.</i>) <i>9 scaled, (amphanth.)</i>
— <i>Scales</i>	(amphanth) <i>4$\frac{1}{2}$ serial, in alternate, cross pairs, thick, dilated upwards with a shield-like apex.</i>
	(1st series) <i>2, opposite.</i>
	(2nd ") <i>2, " , a little higher</i> } all polynuciferous.
	(3rd ") <i>2, " , above</i> }
	(4th ") <i>2, " , higher</i> }
	($\frac{1}{2}$ ") <i>or cap, barren.</i>
<i>Nuts</i>	<i>numerous at base of each scale, angular.</i>
<i>Floration</i>	<i>6th May, 1824. | Fruit, autumnal, persistent.</i>

Place	Park, Kew.
Country	Crete, Italy, Spain.
Dissection	<p>♂</p> <p>1. anent, natural size.</p> <p>2. scale and anthers.</p> <p>♀</p> <p>3. roset (strobile) seen from above.</p> <p>4. scale inside and naked florets in situ.</p> <p>5. floret, separated.</p> <p>6. cone, mature, longitudinally sected.</p> <p>7. lower 4 scales.</p> <p>8. next 4 " , posited on these.</p> <p>9. cap.</p> <p>10. seed (samara.)</p> <p>11. a series of leaves.</p> <p>12. part of a frond of the <i>V. fastigiata</i>.</p>





CUPRESSUS THYOIDES. (W.)

White Cedar.

<i>Branchlets</i>	<i>compressed.</i>				
<i>Leaves</i>	<i>4-rowed, imbricate, ovate.</i>				
— <i>Base</i>	<i>tuberculate.</i>				
<i>Strobile</i>	<i>globose. (Ph.)</i>				
<i>Tree</i>	20 F. branching from near the base, pyramidal appearance.				
— <i>Branches</i>	(lower) rather spreading, the others at about a right angle.				
— <i>Branchlets</i>	(epidermis) reddish-brown, clothed with persistent, brown leaves.				
<i>Fronds</i>	multipinnate.				
— <i>Pinnae</i>	flattish, closely imbricated with minute leaves.				
— <i>Leaves</i>	(on the flat sides) 2, opposite, lozenge-shaped, acute, with a depression containing a tubercle. (on the two opposite sides) embracing the base of the former, subcarinate, etuberculate,—and so proceeding 4 and 4, adnate to branches, and constituting the entire frond.				
<i>Ament</i>	(♂ <i>Inflorescence.</i>) terminal, elliptic, $\frac{1}{8}$ inch, imbricated with flowers.				
<i>Scale</i>	(♂ <i>Florification.</i>) (perigone) ovate-lanceolate, stamiferous at fixation.				
<i>Filaments</i>	0.				
— <i>Anthers</i>	2, globular, sessile, originating at fixation of scale to pedicel.				
<i>Strobile</i>	(♀ <i>Inflorescence, nascent.</i>) terminal, globular, 7-scaled.				
<i>Scale</i>	(♀ <i>Florification.</i>) (common or amphanth, com.) oval, 2-flowered.				
<i>Flowers</i>	naked.				
<i>Ovaries</i>	flattish, pervious at apices.				
— <i>Styles</i>	0.				
— <i>Stigmas</i>	the 2 beaks of ovaries.				
<i>Strobile</i>	(♀ <i>Inflorescence (mature) and Fructification.</i>) imbricated with 7 woody scales (amphanths,) when immature closed and mealy, 3-serial.				
— <i>Scales</i>	<table> <tr> <td>(1st series) 2, opposite.</td><td rowspan="3">} bearing each a samara.</td></tr> <tr> <td>(2nd „) 2, crosswise above these.</td></tr> <tr> <td>(3rd „) 2 laterals.</td></tr> </table>	(1st series) 2, opposite.	} bearing each a samara.	(2nd „) 2, crosswise above these.	(3rd „) 2 laterals.
(1st series) 2, opposite.	} bearing each a samara.				
(2nd „) 2, crosswise above these.					
(3rd „) 2 laterals.					
	and a central one (cap.)				

Capsule	(samara) ovate, glab. crowned with 2, persistent stigmas.
— Wing	short.
Floration	Vernal. | Fruit, estival.
Place	Arboretum, Kew.
Country. . . .	In Swamps, New England to Carolina.
<i>Observation</i> . .	An important tree in North America, but it does not seem to attain any considerable size in Britain.
Dissection	<p>♂</p> <ol style="list-style-type: none"> 1. ament, natural size. 2. " , magnified. 3. scale and 2 anthers. <p>♀</p> <ol style="list-style-type: none"> 4. ament, natural size. 5. scale and 2 naked florets. 6. floret. 7. cone (mature.) 8. the 4 lower scales. 9. the 3 next, turn on these. 10. front view to shew the site of the nuts. 11. & 12. nuts. 13. a series of leaves.





CARPINUS AMERICANA. (W.)

American Hornbeam.

Leaves	<i>oblong-ovate, acuminate, inequally serrate.</i>
Strobile	(scale) 3-parted. " (middle segment) <i>oblique, ovate-lanceolate,</i> <i>one side dentate,</i> (Ph.)
Tree	30 F.
Stem	rather crooked. 10 F. diameter, 1½ F.
— Bark	smooth.
— Branches	alternate, divaricated, hanging, (upper horizontal)
— Epidermis	blackish-brown, glab.
Leaves	thin, alternate.
— Figure	subcordate -elliptic.
— Apex	obtuse-angular.
— Margin	inequally and shortly serrate.
— Serratures	acute.
— Sinus	obtuse and acute-angular.
— Sides	incurved.
— Vertices	short, thick, acuminate.
— Surface	glab. dark bluish green.
— Subface	paler.
— Parenchyma	glab.
— Axis	prominent, long-haired.
— Ramifications	" , parallel, 11 on each side, solitarily long-haired.
Aments	(♀ <i>Inflorescence, nascent.</i>) on the terminal shoots, about 11 sessile-flowered.
— Flowers	approximated in pairs on the central axis.
— Peduncle	pubescent, 1½ inch.
Scale	(outer or podophyl) at base of pedicel, ovate-lan- ceolate, acuminate, diaphanous, brown, mem- branous, longitudinally nerved.
— Nerves	(midones) pubescent.
Scale	(♀ <i>Florification.</i>) (amphanth) monophyllous, 3-fid, strongly reticu- late-venose.
— Base	obtuse. (midone) glab. awry, one side much lower. (margin) intire. (apex) obtuse.
— Lobes	(large, lateral) attaining about ½ length of midone, 3-dentate. (dents) obtuse-angular. (less, lateral) a large tooth with right angular sinus.
Perigone	superior, inequally 5-dentate, obtuse-angular, prominently nerved.

Nut	(♀ <i>Fructification.</i>) (carcerule) sessile at base of scale, (amphanth) glab. ovate, angularly ridge-furrowed, terminated by the two persisting styles, and crowned by the perigone.
Floration	Vernal. | Fruit, July, 1823.
Place	Croome, Worcestershire.
Country	In shady Woods, Canada to Florida.
Observation	The specific character given by authors, to separate this species from <i>C. Betulus</i> , seems so trifling as scarcely to distinguish it from this latter species, of which it probably ought to be considered a mere variety.
Dissection	1. scale (podophyl) amphanth and flower. 2. flower separated.



JUGLANS NIGRA. (W.)

Black Walnut.

<i>Leaflets</i>	<i>numerous, ovate-lanceolate, serrate, subcordate, narrow upwards.</i>
— <i>Subface and</i>	} <i>subpubescent.</i>
— <i>Petiole</i>	
<i>Fruit</i>	<i>globose, scabrous-punctate.</i>
<i>Nut</i>	<i>corrugate. (Ph.)</i>
<i>Tree</i>	<i>80—100 F. with roundish head.</i>
— <i>Stem</i>	<i>18 F. diameter 2½ F.</i>
— <i>Epidermis</i>	<i>longitudinally, lozenge-like-cracked.</i>
— <i>Branches</i>	<i>hanging,</i>
<i>Petiole</i>	{ (common) 1 F. horizontally gland-pubescent. (faliolar) very short, (sub. O) „ .
<i>Leaves</i>	<i>opposite, impair-pinnate.</i>
— <i>Leaflets</i>	<i>7½ pair, alternate, subsessile, diminishing in size.</i>
— <i>Figure</i>	<i>ovate-lanceolate, 1 side boarder.</i>
— <i>Base</i>	<i>rounded.</i>
— <i>Apex</i>	<i>longish-acuminate.</i>
— <i>Margin</i>	<i>adpresst-serrate.</i>
— <i>Serratures</i>	<i>in=, long, incumbent, subhamate.</i>
— <i>Sinus</i>	<i>acute.</i>
— <i>Sides</i>	<i>(ext.) excurved.</i>
— <i>Vertices</i>	<i>subobtuse, incurved.</i>
— <i>Surface</i>	<i>darkish-green.</i>
— <i>Subface</i>	<i>yellow- „</i>
— <i>Parenchyma</i>	{ <i>(oc. bene armat.)</i> <i>prominent,</i> <i>rather elevated, parallel,</i> } <i>gland-haired.</i>
— <i>Axis</i>	
— <i>Ramifications</i>	
<i>Ament</i>	(♂ <i>Inflorescence.</i>) <i>lateral, 2 inches, pendant, subfoliar, sparsed with sessile flowers.</i>
— <i>Peduncle</i>	<i>(axis) glab.</i>
— <i>Pedicel</i>	<i>very short, (sub. O.)</i>
<i>Scale</i>	(♂ <i>Florification,</i>) <i>(amphanth) subfloral, hanging towards base of ament, rhomboid, brown, pubescent-sericeous, small in proportion to the flower.</i>
<i>Flower</i>	<i>sessile at base of scale.</i>
<i>Perigone</i>	<i>6-parted.</i>
— <i>Segments</i>	<i>in=, semilanceolate, acute.</i>
— <i>Sinus</i>	<i>acute.</i>
— <i>Sides</i>	<i>excurved.</i>
<i>Stamens</i>	<i>18—20, rather shorter than perigone, sitting on its broad bottom.</i>

— Anthers	obtuse-quadrangular, basifixt.
— Lobes	adnate, deeply furrowed.
<hr/>	
Flowers.	(♀ <i>Inflorescence.</i>) 2, terminal, sitting between last pair of leaves.
— Peduncle	horizontally gland-haired.
<hr/>	
Scale	(♀ <i>Florification.</i>) (amphanth) orbicular, gland-sericeous, inequally denticulate.
Perigone	4-dentate.
— Dents	semilanceolate, acuminate.
— Sinus	acute.
Ovary	inferior.
— Style	short, glab.
— Stigmas,	long, reflected.
— Segments	2-parted, composed of numerous, in—, jagged, longitudinal, foliations, (lamellae.)
<hr/>	
Pericarp	(<i>Fructification.</i>) orbicular, scabrous-punctate, (small elevated points or warts.)
— Nut	round, subacute.
<hr/>	
Floration	June, 1824. | Fruit, autumnal.
<hr/>	
Place	Arboretum, Kew.
<hr/>	
Country	In woods, New England to Florida.
<hr/>	
Dissection	♂ 1. ament. 2. part of axis of ament, 1 flower, and 2 scales. 3. scale (amphanth.) 4. perigone. 5. stamen. ♀ 6. two flowers. 7. one flower and ovary, longitudinally sected. 8. two pericarps nearly at maturity.





MORUS NIGRA. (W.)

Common Mulberry.

Leaves	cordate, ovate or lobate, inequally dentate, scabrous. (W.)
Tree	35—40 F.
— Stem	8 F. rather crooked.
— Diameter	2 F.
— Bark	cork-like, finely cracked in all directions, grey-brown, lay on lay.
— Branches	cylindric, divaricated.
— Epidermis	pale-brown, glab. warty.
— Branchlets	cylindric.
— Epidermis	drab-color, pubescent.
Petiole	pubescent, 1 inch.
Leaves	subcoriaceous, alternate,
— Figure	cordate-orbicular, (orlobate.)
— Base	deeply cordate.
— Apex	short, obtuse-angular, acuminate.
— Margin	inequally dentate.
— Dents	} obtuse-angular.
— Sinus	
— Vertices	naked.
— Surface	dark-green, scarcely scabrous.
— Subface	parenchymatous areoles glab.
— Axis	very prominent.
— Ramifications	2 basilar opposite, the others } all covered with
— Veins	alternate. } white, thick, short,
	reticulated. } bent hairs, rough to touch.
Aments	(♂ Inflorescence.) elliptic, similar to those of the ♀
Perigone	(♂ Florification.) 4-parted.
Ament	(♀ Inflorescence.) (cluster) supra-axillar, elliptic.
— Peduncle	½ inch, downy.
— Flowers	numerous, sessile.
Perigone	(♀ Florification.) 4-sepaled (2 outer and 2 inner) closely enveloping ovary.
— Sepals	green, concave, intire, round, white-haired-ciliate.
Ovaries	flat, glab. 2-celled.
— Styles	2, long, white-haired, curled.
— Stigmas	the apices of styles.

		<i>(Fructification.)</i>	
Fruit.		(compound berry or sorose) violet-black, oblong, consisting of numerous bacillas adnate by their bases to a central axis.	
— Bacillas.		inversely broad-conic, crowned & calyx, sub 4-lobed, glab. succulent, 1-seeded.	
— Seed		inversely ovate, glab.	
— Episperm		crustaceous.	
Floration		8th June, 1824.	| Fruit, summer.
Place		Mrs. Simpson's, Purser's Cross, Walham-Green.	
Country.		Italy, Tartary, Persia.	
Dissection		—	
		1. ament.	
		2. scale.	
		3. perigone.	
		4. pistil.	
		5. bacilla.	
		6. seed.	

<p> 1. The first part of the report is a general description of the project and its objectives. 2. The second part describes the methods used in the study. 3. The third part presents the results of the study. 4. The fourth part discusses the implications of the findings. 5. The fifth part concludes the report. </p>	<p> 6. The sixth part discusses the limitations of the study. 7. The seventh part discusses the future research needs. 8. The eighth part discusses the conclusions of the study. </p>
<p> 9. The ninth part discusses the significance of the study. 10. The tenth part discusses the contributions of the study. </p>	<p> 11. The eleventh part discusses the impact of the study. 12. The twelfth part discusses the relevance of the study. </p>





2

3

ACER TATARICUM. (W.)

Tartarian Maple.

Leaves	<i>cordate, subincised, inequally dentate.</i>
Corymbs	<i>erect. (W.)</i>
Shrub	large, 20 F. forming a roundish mass.
— Stem.	very short, scarcely any.
— Branches	divaricated, arising from near the root-crown and pendant to the ground.
— Epidermis	pale-brown, glab.
— Branchlets	2-chotomous.
Petiole	long, $\frac{2}{3}$ length of leaf, pinkish, glab.
Leaves	on the shoots, opposite.
— Figure	orbicular-elliptic.
— Base	round or subcordate.
— Apex	" , with a short obtuse-angular point.
— Margin	subincised, inequally serrate.
— Serratures	short, obtuse-angular.
— Sinus	acute and " "
— Sides	excurved.
— Vertices	naked.
— Surface	dark-green.
— Subface.	rather paler.
— Parenchyma	glab.
— Axis	elevated, solitarily haired.
— Ramifications . . .	" , simple, alternate, parallel,
— Veins	bold. obsolete.
Inflorescence	corymb compound, terminal, intrafoliar, $2\frac{1}{2}$ inch.
— Anthopode	generally twice branched, very shortly sericeous.
— Branches	mostly opposite.
— Pedicels	= length of flower.
Bracteas	{ (podophyls) at branchings of anthopode, narrow, subdilated upwards, serrate.
Calyx	downy-pubescent, yellow-green, 5 (4) part.
— Segments	elliptic, obtuse, ciliate.
Corol	5 (4) petaled.
— Petals	lanceolate, pubescent, rather longer than calyx-segments and alternating with them.
Stamens	8, nearly = petals, fixed on a yellow, waxy, lobed gonophore.
— Filaments	subulate, glab.
— Anthers	oblong, basifixt, 2-lobed.

— Lobes	adnate, side-furrowed.
Ovary	green, flattish, circular, pubescent.
— Style	furrowed.
— Stigmas	2, excurved, short.
	(Fructification.)
Pericarp	(samara) 2-alate, rounded at base, green, sprinkled with minute, brown atoms, solitarily haired.
— Wings	2, one-sided, membranous, ascending, lanceolatè, with the 2 persistent stigmas between them, pink, yellow-veined from the exterior, strong margin.
Floration	May 19th, 1824. | Fruit, August.
Place	Mr. James Lee's, Hammersmith.
Country	Northern Asia.
Dissection	1. corymb of flower. 2. a single flower as seen from above. 3. ovary.





1.

2.

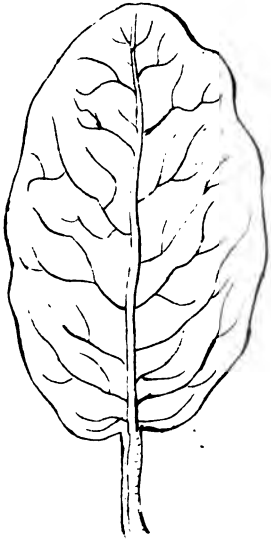
ELEAGNUS ARGENTEA. (Ph.)

Silvery Oleaster.
(*Missouri Silver Tree.*)

<i>Plant</i>	unarmed.
<i>Leaves</i>	oblong, acute.
— <i>Faces</i>	silvery-lepidose.
<i>Flowers</i>	subsultary, nutant. (Ph.)
<i>Shrub</i>	4—5 F.
<i>Stem</i>	erect.
— <i>Bark</i>	purplish-brown, densely scaly.
— <i>Branchlets</i>	yellow, ferruginous-scaly.
<i>Petiole</i>	short.
<i>Leaves</i>	alternately scattered on the shoots.
— <i>Figure</i>	true lanceolate.
— <i>Base</i>	taper.
— <i>Apex</i>	obtuse-angular.
— <i>Margin</i>	intire, scaly.
— <i>Surface</i>	pale green
— <i>Subface</i>	lighter, glaucous
— <i>Axis</i>	rather prominent
— <i>Veins</i>	obsolete
<i>Inflorescence</i>	flowers solitary, (1—3) axillary.
— <i>Peduncle</i>	sub O.
<i>Perigone</i>	tubular, hunched at adherence of ovary, 4 (6)-fid,
— <i>Tube</i>	argenteous-lepidose, coloured yellow inside,
— <i>Segments</i>	longish.
— <i>Sinus</i>	semilanceolate, acute, intire.
— <i>Sides</i>	acute.
— <i>Apex</i>	incurved.
<i>Stamens</i>	acute.
— <i>Filaments</i>	4 (5—6) adhering to perigone just below its divisions.
— <i>Anthers</i>	lower $\frac{2}{3}$ part adnate, free above.
— <i>Lobes</i>	oblong, 2-lobed.
<i>Ovary</i>	adnate, opening at sides.
— <i>Style</i>	adhering and hid in the calyx.
— <i>Stigma</i>	ascending, shorter than stamens, club'd, pubescent below.
<i>Floration</i>	the club of style.
<i>Place</i>	18th May, 1824.
	T. Canham's, Esq. Twickenham.

Country.	North America,
Observation	Every part of the plant is argenteous-lepidose, excepting the inside of perigone.
Dissection	1. flower laid open, stamens and pistil. 2. a piece of leaf magnified to shew the silvery scutellas on the face.





A



RHODODENDRON OBTUSUM. (HORT.)

Obtuse-leaved Rhododendron.

Branches	<i>thickish, stiff.</i>
Leaves	<i>coriaceous, subcordate-elliptic.</i>
— Margin	<i>intire (naked.)</i>
Calyx	<i>very short, inequally undulate-crenate. (P.W.W.)</i>
Shrub	<i>stiff, erect, 3—4 F.</i>
— Stem	<i>cylindric, green, glab.</i>
Petiole	<i>glab. short, $\frac{1}{3}$ length of leaf.</i>
Leaves	<i>coriaceous, alternate.</i>
— Figure	<i>subcordate-elliptic.</i>
— Base	"
— Apex	<i>obtuse.</i>
— Margin	<i>intire (not ciliate or punctate.)</i>
— Surface	<i>glab. dark-green, shining.</i>
— Subface	" , yellow- " , and paler.
— Parenchyma	"
— Axis	" , elevated.
— Ramifications & Veins	} <i>obsolete, sunk in the parenchyma</i>
Inflorescence	<i>terminal, a simple umbel-corymb.</i>
— Peduncles	<i>(rays) long, 1 inch, flesh-haired.</i>
Bracteas	<i>(podophylls) at base of rays, brown, semilanceolate acuminate-dentate.</i>
Phoron	<i>round base of ovary, short, undulate-crenate, downy.</i>
Calyx	<i>very short! inequally undulate-crenate.</i>
Corol	<i>complanate-rotate, 5-fid.</i>
— Tube	<i>very short,</i>
— Segments	<i>in =.</i>
— Sinus	<i>acute.</i>
— Sides	<i>straight (or excurved,) intire.</i>
— Apex	<i>obtuse.</i>
Stamens	<i>10, in =, shorter than corol.</i>
— Filaments	<i>subulate, lower half horizontally white-haired.</i>
— Anthers	<i>oblong, medifixt, 2-lobed.</i>
— Lobes	<i>narrow, adnate, with pervious apices!</i>
Pistil	<i>rather longer than stamens.</i>
— Ovary	<i>conic, slightly grooved, finely pubescent.</i>
— Style	<i>glab. red, thicker upwards.</i>
— Stigma	<i>simple, the club'd end of style.</i>

Floration	19th June, 1824.
Place	Messrs. Whitley, Brames, & Milne, Fulham.
Country	Pontus.
Observation	From the general aspect, peculiar stiffness of the branches and very coriaceous, subcordate leaves, I have been induced to consider this plant a distinct species though it is said to be produced by the seeds of <i>R. ponticum</i> .
Dissection	1. stamen.

162 A. RHODODENDRON PUNCTATUM. V. MINUS.

Small dotted-leaved Rhododendron.

Branches	red-green, spangled, glab.
Leaves	alternate, shortly petiolate, lanceolate.
— Surface	glab. shining green, yellow-spotted.
— Subface	„ . dull, pale yellow-green, covered with spangles.
— Axis	elevated.
— Branches	obsolete.
Inflorescence	umbel-corymbose, terminal, 11-flowered.
— Pedicels	rather longer than flowers, covered with diaphanous spangles.
Calyx	very short, inequally 5-fid, spangled.
— Segments	semilanceolate.
— Sinus	obtuse-angular.
Corol	1-petal'd, shortly tubular, 5-fid, rose, sparsed with spangles.
— Segments	intire, obtuse.
Stamens	10, in =, ascending, shorter than corol, inserted close under base of ovary.
— Filaments	white, subulate, lower half horizontally white-haired.
— Anthers	yellow, oblong.
— Lobes	adnate.
Pistil	shorter than stamens.
— Ovary	conic, grooved, green, white-spangled.
— Style	rose, glab. ascending.
— Stigma	yellow, simple, subclavate.
Floration	19th June, 1824.
Place	Rather rare. | A native of North America.
Dissection	1. stamen. 2. pistil.





ÆSCULUS FLAVA. (W.)*Yellow-flowered Horse Chestnut.*

Leaves	<i>quinate, equally serrate.</i>
— Subface	<i>(axis) pubescent.</i>
Raceme	<i>thyrsoid.</i>
— Fascicle	<i>many flowered.</i>
Corol	<i>4-petaled.</i>
— Petals	<i>connivent, claws longer than calyx.</i>
Stamens	<i>shorter than corol.</i>
Fruit	<i>unarmed. (Ph.)</i>
<hr/>	
Tree	<i>large, 25 F. with orbicular head.</i>
— Stem	<i>7 F. diameter, 2 F.</i>
— Bark	<i>smooth, very little cracked.</i>
— Branches	<i>lower hanging, upper ascending, all densely re-branched.</i>
<hr/>	
Petiole	<i>(common) 2½ inches, cylindric, finely short-sericeous.</i>
	<i>(faliolar) short, ¼ inch, " "</i>
<hr/>	
Leaves	<i>5-nate, fingered, opposite.</i>
— Leaflets	<i>lanceolate.</i>
— Base	<i>attenuate.</i>
— Apex	<i>acuminate.</i>
— Margin	<i>finely and inequally serrate.</i>
— Serratures	<i>angular.</i>
— Sinus	<i>acute- " .</i>
— Sides	<i>subexcurved.</i>
— Apices	<i>acute and obtuse-angular.</i>
— Surface	<i>dark-green, glab.</i>
— Subface	<i>yellow- " , paler.</i>
— Axis	<i>thick and strongly elevated, sides.</i>
— Ramific.	<i>slender, subparallel, alternate</i>
— Veins	<i>..... } curled-haired.</i>
<hr/>	
Inflorescence	<i>a compound, 5½ inches, terminal, raceme.</i>
— Anthopode	<i>twice branched, yellow-green, shortly downy.</i>
— Peduncle	<i>(axis) thick, tapering.</i>
— Branches	<i>short, about 4-flowered.</i>
— Pedicel	<i>½ length of calyx.</i>
<hr/>	
Calyx	<i>subventricose, yellow, tubular, short-brown-gland-haired, inequally 5-dentate.</i>
— Tube	<i>rather long.</i>
— Dents	<i>obtuse, gland-ciliate.</i>
— Sinns	<i>acute.</i>
— Sides	<i>incurved.</i>
— Apices	<i>obtuse.</i>

Corol	yellow, 4-petaled, connivent, 2 shorter and 2 longer, membranous, veined.
— Petals	(2 shorter) limb, circular, sparsed with yellow glands and sericeous margin.
	claw, longer, woolly.
	(2 longer) limb, very small, rather folded, attenuated into a
	claw, long, thick, yellow, woolly, longer than shorter petals.
	(all the claws exceed the calyx.)
Stamens	7, shorter than petals, inserted round base of pistil.
— Filaments	attenuated, glab. above, long, white-haired below.
— Anthers.	oblong, deep-orange, basifixt, 2-lobed.
— Lobes	adnate, laterally opening and deeply furrowed.
Pistil	shorter than stamens.
— Ovary	cylindric, pubescent.
— Style	O.
— Stigmas	2, orange-red, short, (mere points of ovary.)
Pericarp	unarmed.
Floration	26th May, 1824.
Place	Messrs. Whitley & Co.'s, Fulham.
Country.	In the Mountains of Virginia and Carolina, and Woods of Kentucky.
Dissection	1. calyx laid open, shewing the ovary and style. 2. 2. shorter petals. 3. 3. longer " . 4. stamen. 5. fruit (capsule).





J. Hart Del.

Bl by J. G. Arch. Cornhill. Sep 11 1826.

ÆSCULUS PAVIA. (W.)*Red-flowered Horse Chestnut.*

<i>Leaves</i>	<i>quinate, glab. inequally serrate.</i>
<i>Raceme</i>	<i>lax, fasciculate, 3-flowered.</i>
<i>Corol</i>	<i>4-petaled.</i>
— <i>Petals</i>	<i>connivent.</i>
— <i>Claws</i>	<i>= length of calyx.</i>
<i>Stamens</i>	<i>7, shorter than corol.</i>
<i>Fruit</i>	<i>unarmed. (Ph.)</i>
<i>Tree</i>	<i>small, upright, 12—15 F. with globular or pyramidal head.</i>
— <i>Stem</i>	<i>6 F. diameter, 5—inches.</i>
— <i>Bark</i>	<i>smooth, purplish-brown.</i>
<i>Petiole</i>	(common) <i>glab. reddish, rather flat above, 3½ inches.</i> (faliolar) <i>very short, sub O.</i>
<i>Leaves</i>	<i>cross-wise opposite, 5-nate, (fingered.)</i>
— <i>Leaflets.</i>	<i>subdilated-lanceolate.</i>
— <i>Base</i>	<i>attenuated into the short petiole.</i>
— <i>Apex</i>	<i>acuminate.</i>
— <i>Margin</i>	<i>inequally serrate.</i>
— <i>Serratures</i>	<i>in=, short.</i>
— <i>Sinus</i>	<i>angular.</i>
— <i>Sides</i>	<i>generally excurved.</i>
— <i>Apices.</i>	<i>bluntish, subincrassated.</i>
— <i>Surface</i>	<i>dark-green, glab.</i>
— <i>Subface</i>	<i>yellow " "</i>
— <i>Parenchyma</i>	<i>glab.</i>
— <i>Axis</i>	<i>strongly elevated, sides partly white-pubescent.</i>
— <i>Ramific.</i>	<i>about 17 each side, alternate and opposite, straight, boldly elevated, glab.</i>
— <i>Λs.</i>	<i>hair-bundled.</i>
— <i>Veins</i>	<i>finely reticulated.</i>
<i>Inflorescence</i>	<i>a compound raceme.</i>
— <i>Anthopode</i>	<i>biramose, red.</i>
— <i>Peduncle</i>	<i>(axis) thickish, densely short-pubescent.</i>
— <i>Branches</i>	<i>shortish, subopposite, about 3-flowered.</i>
— <i>Pedicels</i>	<i>½ length of calyx.</i>
<i>Calyx</i>	<i>red, subventricose at base, tubular, short-flesh-haired, inequally 5-dentate.</i>
— <i>Tube</i>	<i>long.</i>
— <i>Dents</i>	<i>in=, jagged-ciliate.</i>
— <i>Sinus</i>	<i>acute.</i>

Corol	in=, 4-petaled, veined, connivent, greenish-red, set with diaphanous, globular, pediceled glands.
	(2 broader) limb, circular.
— Petals	claw, long, = length of calyx.
	(2 narrower) longer than the others, limb less and tapering into a long claw, nearly as long as 2 broader petals, woolly, margin incurved.
Stamens	7, white, red in the middle and thicker, shorter than lower petals, long-white-haired.
— Anthers	basifixt, oblong, glab.
— Lobes	adnate, narrow, furrowed.
Pistil	rather shorter than stamens.
— Ovary	subcylindric, pubescent.
— Style	O.
— Stigma	the very short, 2-fid apex of ovary.
Pericarp	unarmed.
Floration	26th May, 1824.
Place	Messrs. Whitley & Co.'s, Fulham.
Country	In fertile Valleys, on the Mountains of Virginia and Carolina.
Dissection	1. calyx and style. 2. style separated. 3. 3. shorter petals. 4. 4. longer „ . 5. stamen. 6. fruit, capsule.





MESPIUS ARONIA. (W. E. SUP.)

Aronian Thorn.

Leaves	(apex) incised-dentate.
— Faces	glab.
Calyx-Segments	intire, acuminate.
Drupoid	1-pyrened, 1-kernel'd. (P. W. W.)
Shrub	handsome, bushy, 8 F.
Stem	scarcely any.
— Bark	dark-brown.
— Branches	glab. shining, olive-brown.
Petiole	$\frac{3}{4}$ inch, glab. grooved above.
Leaves	alternate, 3—5-lobed.
— Base	intire, cuneate, and running into the petiole.
— Apex	(midlobe) angular,
— Tomation	(discal) half depth.
— Lobes	longish, midone shorter.
— Sinus	acute-angular.
— Sides	straight.
— Vertices	(points of lobes) narrow.
— Margin	inequally serrate.
— Serratures	acute-angular.
— Sinus	obtuse and obtuse angular.
— Sides	subrectilinear.
— Apices	acuminate, indurated.
— Surface	shining.....
— Subface	dull, paler....
— Axis	elevated.....
— Ramifications	sub ".....
— Veins	reticulated.....
Stipules	2 at base of each leaf, crescent-shaped inside, lobed-acuminate-serrate outside.
— Faces	glab.
Inflorescence	a compound, terminal, umbel-like corymb.
— Anthopode	glab. green, branched.
— Peduncles	6—8, originating from nearly same point.
— Pedicels	3—4 at end of each peduncle, sub= flowers.
Bracteas	(podophyls) several at base of peduncles, semi- lunate, acuminate, denticulate, with a lateral base-lobe.
Calyx	glab. shining, tubular, 5-fid, shorter than flower.
— Tube	longish.

— Segments . . .	intire, acuminate, carinate,
— Sinus . . .	very obtuse.
— Sides . . .	excurved.
— Apices . . .	long, red.
Corol . . .	5-petaled.
— Petals . . .	white, circular, intire, inserted on calyx, short-clawed.
Stamens . . .	18, = petals, inserted on a membrane, lining upper part of calyx.
— Filaments . . .	white, glab. tapering.
— Anthers . . .	submedifixt, oblong, 2-lobed.
— Lobes . . .	narrow, laterally opening.
Pistil . . .	rather shorter than stamens.
— Ovary . . .	hid in base of calyx.
— Style . . .	glab. arising from a hair-tuft.
— Stigma . . .	simple, circular, flat, projecting.
Drupe . . .	glab. purple, oblong, coronate.
— Nut . . .	1-celled, 1-seeded.
Floration . . .	31st May, 1824.
Place . . .	Messrs. Loddiges & Sons', Hackney.
Country . . .	Aronia.
Dissection . . .	1. flower laid open, stamens and pistil. 2. stamen separated. 3. style and stigma. 4. corymb of fruits. 5. drupe, transversely sected. 6. seed.





COMPTONIA ASPLENIFOLIA. (W.)

*Fern leaved Comptonia.**(Sweet Fern Bush.)*

<i>Leaves</i>	<i>long-linear, alternate, crenate-pinnatifid.</i> (Ph.)
<i>Shrub</i>	bushy, divaricated-close-branched, 3—4 F.
— <i>Stem.</i>	zig-zag, glab. dark brown, warted.
— <i>Branches</i>	black-brown, horizontally black-haired.
— <i>Branchlets</i>	green-woolly.
<i>Petiole</i>	short, pubescent.
<i>Leaves</i>	alternate on the shoots, 2½ inches.
— <i>Figure</i>	narrow, long-lanceolate.
— <i>Base.</i>	} acute.
— <i>Apex</i>	
— <i>Margin</i>	parted-dentate.
— <i>Dents.</i>	(incisions) about 12, close, large, inclining to the apex.
— <i>Sinus</i>	close, acute.
— <i>Sides</i>	excurved.
— <i>Apices</i>	obtuse-angular.
— <i>Surface.</i>	densely pubescent, sparsed with transparent, golden particles.
— <i>Subface.</i>	rather paler, long-haired.
— <i>Axis</i>	elevated, " "
— <i>Ramifications</i>	} level with parenchyma.
— <i>& Veins</i>	
<i>Ament</i>	(♂ <i>Inflorescence.</i>) ⅔ inch, closely imbricated with scales, side-terminal, subsessile.
— <i>Peduncle</i>	sub O.
<i>Scale.</i>	(♂ <i>Florification.</i>) (perigone) brown, deltoid (or hastate) antheriferous.
— <i>Sides.</i>	excurved, woolly.
— <i>Apex</i>	sub-acute.
<i>Stamens</i>	3, twin, sessile at base of scale.
— <i>Filaments</i>	O.
— <i>Anthers.</i>	2-lobed.
— <i>Lobes.</i>	semiadnate, laterally opening.
<i>Ament</i>	(♀ <i>Inflorescence.</i>) globular-elliptic, lateral, sessile, arising from a bunch of perillas (scales), closely imbricate with florets.
<i>Scale</i>	(♀ <i>Florification.</i>) transversely subrhomboid, downy, upper half brown.

Calyx	at base of scale, flat, 6 sepaled.
— Sepals	in =, linear.
Pistil.	(longest) twice length of scale, acute and acuminate, glab. upwards, hairy at base.
— Ovary	glab. flat-globular, shining.
— Style.	very short.
— Stigmas.	2, reddish, downy, excurved.
Floration and	11th June, 1824.
Fruetification	
Place	Messrs. Loddiges and Sons', Hackney.
Country.	In sandy, stony or slaty Woods, New England to Virginia.
Observation	I could not see the 2-sepaled calyx, as mentioned by W.
Dissection	<p>♂</p> <p>1. ament.</p> <p>2. scale and anthers.</p> <p>♀</p> <p>3. ament.</p> <p>4. scale and flowers.</p> <p>5. pistil.</p>





JUGLANS (CARYA) PORCINA. V. OBCORDATA. (M.)

Obcordate Walnut, (Pig-Nut, Hog-Nut, Brown Hickory.)

<i>Leaflets</i>	<i>about 7, lanceolate, acuminate, serrate.</i>
— <i>Impair</i>	<i>sessile.</i>
— <i>Faces</i>	<i>glab.</i>
<i>Fruit</i>	<i>globose.</i>
<i>Nut</i>	<i>smooth, very hard. (Ph.)</i>
<i>Tree</i>	<i>erect, 60 F.</i>
— <i>Stem</i>	<i>continuous, 7 F. Diameter 14 inches.</i>
— <i>Bark</i>	<i>longitudinally shell-crackd.</i>
— <i>Branches</i>	<i>(lower) horizontal.</i>
	<i>(upper) at an \angle of 45.</i>
<i>Petiole</i>	<i>(common) 5½ inches, cylindric, glab. or with very few minute hairs.</i>
	<i>(faliolar) O.</i>
<i>Leaves</i>	<i>about 4 on the shoots, impair-pinnate.</i>
— <i>Leaflets.</i>	<i>2½ pairs, impair shortly petiolate.</i>
— <i>Figure</i>	<i>(impair and upper) obovate-lanceolate.</i>
— <i>Base</i>	<i>(lower pair) lanceolate, sessile.</i>
— <i>Apex</i>	<i>attenuate.</i>
— <i>Margin</i>	<i>finely acuminate.</i>
— <i>Serratures</i>	<i>subequally serrate.</i>
— <i>Sinus</i>	<i>rather incumbent.</i>
— <i>Sides</i>	<i>acute, close.</i>
— <i>Surface</i>	<i>(exterior) long, excurved.</i>
— <i>Axis &</i>	<i>(interior) short, subincurved.</i>
— <i>Ramificat.</i>	<i>yellow-green..</i>
— <i>Subface</i>	<i>elevated !....</i>
— <i>Axis</i>	<i>sparsed with brown atoms.</i>
— <i>Ramificat.</i>	<i>concolor, brightish,</i>
	<i>elevated, minutely brown gland- }</i>
	<i>haired.. ..</i>
	<i>strewed with</i>
	<i>yellow wax-</i>
	<i>atoms.</i>
	<i>„ , parallel, forked at ex-</i>
	<i>tremities</i>
<i>Aments.</i>	<i>(♂ Inflorescence.)</i>
— <i>Anthopode</i>	<i>in 3 umbel-like sets at base of shoots, 3 inches,</i>
— <i>Peduncle</i>	<i>slender, cylindric, pendant.</i>
— <i>Rays</i>	<i>4-rayed, gland-haired.</i>
	<i>¾ inch.</i>
	<i>½ inch.</i>
<i>Flowers.</i>	<i>(♂ Florification.)</i>
	<i>numerous, sessile, sparsed on the axis, rather remote in the middle.</i>

— Scale	(perigone) succulent, green, sessile, sparsely with brown, pedicel'd gland-hairs, inequally 3-lobed.
— Lobes	erect, laterals subobtusely, midone longer and acute.
Stamens.	4 (5) sessile at base of scale and shorter than its lobes.
— Filaments	sub O.
— Anthers.	square-orbicular, tumescent, green, 2-lobed.
— Lobes	adnate, deeply furrowed, erect-white-haired.
	(♀ Inflorescence.)
Peduncle	4—6-flowered.
Flowers.	sessile.
Calyx	succulent, 4-dentate (one longer) strewed with brown, globular atoms (glands.)
— Dents and Sinus .	angular.
— Sides	subexcurved.
— Apices	obtusish.
Ovary	hid in the calyx.
Styles	O.
Stigmas	2, rather longer than calyx, obtuse, jagged.
	(Fructification.)
Pericarp	globular, very slightly compressed.
— Pannextern . . .	brown, lumpy (warted) excurved, 4-parted at apex.
— Nut	compressed, obcordate, mucronate, 2-valved !
— Putamen	hard, subglab.
Floration	8th June, 1824. | Fruit, autumnal.
Place	Park, near the Pagoda, Kew.
Country	In dry, fertile Forests, New England to Virginia.
Dissection	♂
	1. aments.
	2. perigone, outside.
	3. stamen, separated.
	♀
	4. spike of flowers.
	5. flowers.
	6. pericarp.
	7. nut, separated.





SALISBURIA ADIANTIFOLIA. ♂. (W.)

Maiden-hair leaved Salisburia.

<i>Flowers.</i>	(♂) <i>naked, amentaceous.</i>
<i>Anthers.</i>	<i>3-lobed, imbricated on the axis.</i>
<i>Calyx</i>	(♀) <i>4-parted.</i>
<i>Drupe</i>	(nut) <i>3-angular. (W.)</i>
<i>Tree.</i>	50 F. <i>erect.</i>
— <i>Stem.</i>	6 F. <i>Diameter 18 inches.</i>
— <i>Bark.</i>	<i>not much crackt.</i>
— <i>Branches</i>	<i>cylindric, long, slender, zig-zag.</i>
— <i>Epidermis</i>	<i>purplish-brown, glab.</i>
<i>Petiole</i>	<i>glab. very long, 2½ inches, flat above.</i>
<i>Leaves</i>	<i>on short spurs in alternate bundles of 2—5.</i>
— <i>Figure</i>	<i>semicircular (or semielliptic)</i>
— <i>Base.</i>	<i>various, truncate, cordate or spatulate.</i>
— <i>Apex</i>	<i>(periphery) part of a semicircle or ellipsis.</i>
— <i>Tomation</i>	<i>(discal) ½ way.</i>
— <i>Sinus,</i>	<i>(gash) close, acute-angular.</i>
— <i>Sides</i>	<i>straight.</i>
— <i>Lobes</i>	<i>short.</i>
— <i>Margin</i>	<i>(of lobes) inequally crenate.</i>
— <i>Crenatures</i>	<i>short.</i>
— <i>Sinus</i>	<i>shallow, various.</i>
— <i>Sides</i>	<i>excurved.</i>
— <i>Vertices</i>	<i>obtuse.</i>
— <i>Surface.</i>	<i>glab. rather shining, verdigrease-green, with longitudinal striae from the base.</i>
— <i>Subface.</i>	<i>dull, concolor.</i>
— <i>Parenchyma</i>	<i>covered with minute, circular, glaucous spots.</i>
— <i>Nerves</i>	<i>level with parenchyma, simple, rayed from base of petiole.</i>
<i>Inflorescence</i>	<i>aments in a 5-rayed, terminal umbel, from a perilla'd base, (with a leaf-tuft in the center) 1 inch, excurved, with 25—30 imbricated, naked anthers (flowers.)</i>
— <i>Anthopode.</i>	<i>glab.</i>
— <i>Pedicels.</i>	<i>very short.</i>
<i>Stamens.</i>	<i>shortly pedicel'd on the axis.</i>
— <i>Filaments</i>	<i>O</i>
— <i>Anthers.</i>	<i>glab. pendant, inequally 3-lobed.</i>
— <i>Lobes.</i>	<i>oblong-cylindric, 2 laterals opening inwardly.</i>

Flóration	8th May, 1824, against a wall at Kew.
Place	Mrs. Simpson's, Purser's Cross, Walham Green.
Country.	Japan.
Dissection	<p>♂</p> <p>1. ament.</p> <p>2. stamen as it hangs towards base of ament.</p>





ACER RUBRUM. (W.)

*Scarlet-flowered Maple.**(Red Maple. Swamp Maple.)*

<i>Leaves</i>	<i>palmate, sub 5-lobed, inequally incised-dentate, incisions acute.</i>
— <i>Base</i>	<i>cordate.</i>
— <i>Subface.</i>	<i>glaucous.</i>
<i>Umbel</i>	<i>sessile.</i>
<i>Pedice.</i>	<i>elongate.</i>
<i>Germen</i>	<i>glab.</i> (Ph.)
<i>Tree</i>	<i>upright, 40—45 F.</i>
— <i>Stem</i>	<i>12 F. Diameter 1½ F.</i>
— <i>Bark</i>	<i>smooth, not much crackt.</i>
— <i>Branches</i>	<i>divaricated, rather ascending.</i>
— <i>Epidermis</i>	<i>dark-brown.</i>
— <i>Branchlets</i> . . .	<i>sparsed with elevated points, (warts.)</i>
<i>Petiole</i>	<i>nearly = leaves, 3 inch, slender, glab.</i>
<i>Leaves</i>	<i>about 3 opposite pairs, terminal on the shoots.</i>
— <i>Figure</i>	<i>5-lobed, 2 lower lobes smaller.</i>
— <i>Base</i>	<i>cordate-truncate.</i>
— <i>Apex</i>	<i>(of lobes) acute.</i>
— <i>Tomation</i>	<i>(discal) about ½ way.</i>
— <i>Sinus</i>	<i>acute-angular.</i>
— <i>Lobes</i>	<i>broad-lanced, incised-dentate.</i>
— <i>Sides</i>	<i>rather straight.</i>
— <i>Vertices</i>	<i>short-acuminate.</i>
— <i>Margin</i>	<i>incised-dentate.</i>
— <i>Dents</i>	<i>in=.</i>
— <i>Sides</i>	<i>excurved.</i>
— <i>Vertices</i>	<i>obtuse and acute-angular, thickish.</i>
— <i>Surface</i>	<i>glab. light-green.</i>
— <i>Subface</i>	<i>paler.</i>
— <i>Parenchyma</i> . . .	<i>glab.</i>
— <i>Nerves</i>	<i>5 principal from a point at base of leaf, elevated, terminating the lobes, solitarly white-haired.</i>
— <i>Ramifications & Veins</i> . .	<i>{ anastomosing.</i>
<i>Inflorescence</i> . . .	<i>a sessile umbel on the sides of the leaf-buds, 5—6-flowered.</i>
— <i>Anthopode</i>	<i>simple, long, 1½ inch, glab.</i>
<i>Perigone</i>	<i>8-parted, tinged green and red.</i>
— <i>Segments</i>	<i>lanceolate.</i>
— <i>Margins</i>	<i>intire.</i>

— Apices	inequally dentate.
Stamens	5, shorter than calyx, inserted at the divisions of the perigone.
— Filaments	short, flattish.
— Anthers	pink, globular, 2-lobed.
— Lobes	laterally apertous.
Pistil	
— Ovary	2-lobed, glab! (sometimes 2-3 present.)
— Style	very short.
— Stigmas	2, pink, sericeous, excurved.
Samaras	(pericarps) 2, small, adnate.
— Wings	erect, obtuse, nerved.
Floration	11th May, 1824.
Place	Mrs. Simpson's, Purser's Cross, Walham Green.
Country. . . .	In Low Woods, Canada to Florida.
Dissection	1. umbel of flowers. 2. flower separated, with its stamens. 3. stamen " 4. ovary and stigmas, taken from center of flower. 5. mature fruit (samaras.)





ACER STRIATUM. (D. R.)

*Striped-barked Maple.**(Striped Maple. Moose Wood.)*

<i>Leaves</i>	<i>rounded below, acuminate, 3-cuspidate, deeply serrate, glab. above.</i>
<i>Racemes</i>	<i>simple, pendulous. (Ph.)</i>
<i>Shrub</i>	<i>large, 10 F.</i>
— <i>Stem</i>	<i>very short.</i>
— <i>Branches</i>	<i>from near the root-crown, cylindric.</i>
— <i>Epidermis</i>	<i>glab. sparsed with brown irregular warts, and marked with interrupted, longitudinal, white strias.</i>
— <i>Branchlets</i>	<i>glab. green.</i>
<i>Petiole</i>	<i>pink, shortish, $\frac{3}{4}$ inch, furrowed above.</i>
<i>Leaves</i>	<i>in two opposite pairs, terminating the shoots.</i>
— <i>Figure</i>	<i>3-lobed.</i>
— <i>Base</i>	<i>cordate.</i>
— <i>Tomation</i>	<i>(discal) $\frac{1}{2}$.</i>
— <i>Sinus</i>	<i>obtuse-angular.</i>
— <i>Lobes</i>	<i>long-acuminate.</i>
— <i>Sides</i>	<i>excurved.</i>
— <i>Vertices</i>	<i>(of lobes) acuminate.</i>
— <i>Margin</i>	<i>incised-serrate.</i>
— <i>Serratures</i>	<i>very in=, obtuse and acute.</i>
— <i>Sides</i>	<i>excurved.</i>
— <i>Vertices</i>	<i>various.</i>
— <i>Surface</i>	<i>glab. fine-palish-green, rather puckered.</i>
— <i>Subface</i>	<i>(parenchyma) glab.</i>
— <i>Nerves</i>	<i>3 principal from a point at base of leaf, terminating the lobes, very prominent.</i>
— <i>Ramifications</i>	<i>straight, furcate at terminations, anastomosing with veins, and both covered with short, yellow, shining flesh-hairs.</i>
<i>Raceme</i>	<i>(Inflorescence.)</i> <i>intrafolius, 2-inch, pendant, simple, about 11-flowered, (5 opposite pairs and 1 terminal.)</i>
<i>Anthopode</i>	<i>slender, pubescent.</i>
— <i>Pedicel</i>	<i>„, glab. rather longer than flower.</i>
<i>Gonophore</i>	<i>smooth, thin, 8-crenate-lobed.</i>
<i>Calyx</i>	<i>glab. 5-parted, green, veined, petal-like.</i>
— <i>Segments</i>	<i>acute.</i>
— <i>Sinus</i>	<i>obtuse.</i>
— <i>Sides</i>	<i>intire.</i>

Corol	rather longer than calyx, 5-petaled.
— Petals	alternating with divisions of calyx, veined, spatulate, dilated at apex, obtuse.
Stamens	8, shorter than petals, inserted under the edge of gonophore, in the entering bends.
— Filaments	tapering.
— Anthers	basifixt, cordate, 2-lobed.
— Lobes	adnate.
Ovary	glab. flat, subimmersed in the gonophore.
— Style	0
— Stigmas	2, short.
Samaras	2, yellow, adnate.
— Wings	lanceolate, nerved, expanded.
Floration	10th May, 1824.
Place	Mrs. Simpson's, Purser's Cross, Walham Green.
Country	In Mountain Woods, Canada to Virginia.
Dissection	1. raceme of flowers. 2. flower seen from above, with its stamens. 3. ovary taken from its centre. 4. fruit, (2 conjoined samaras.)





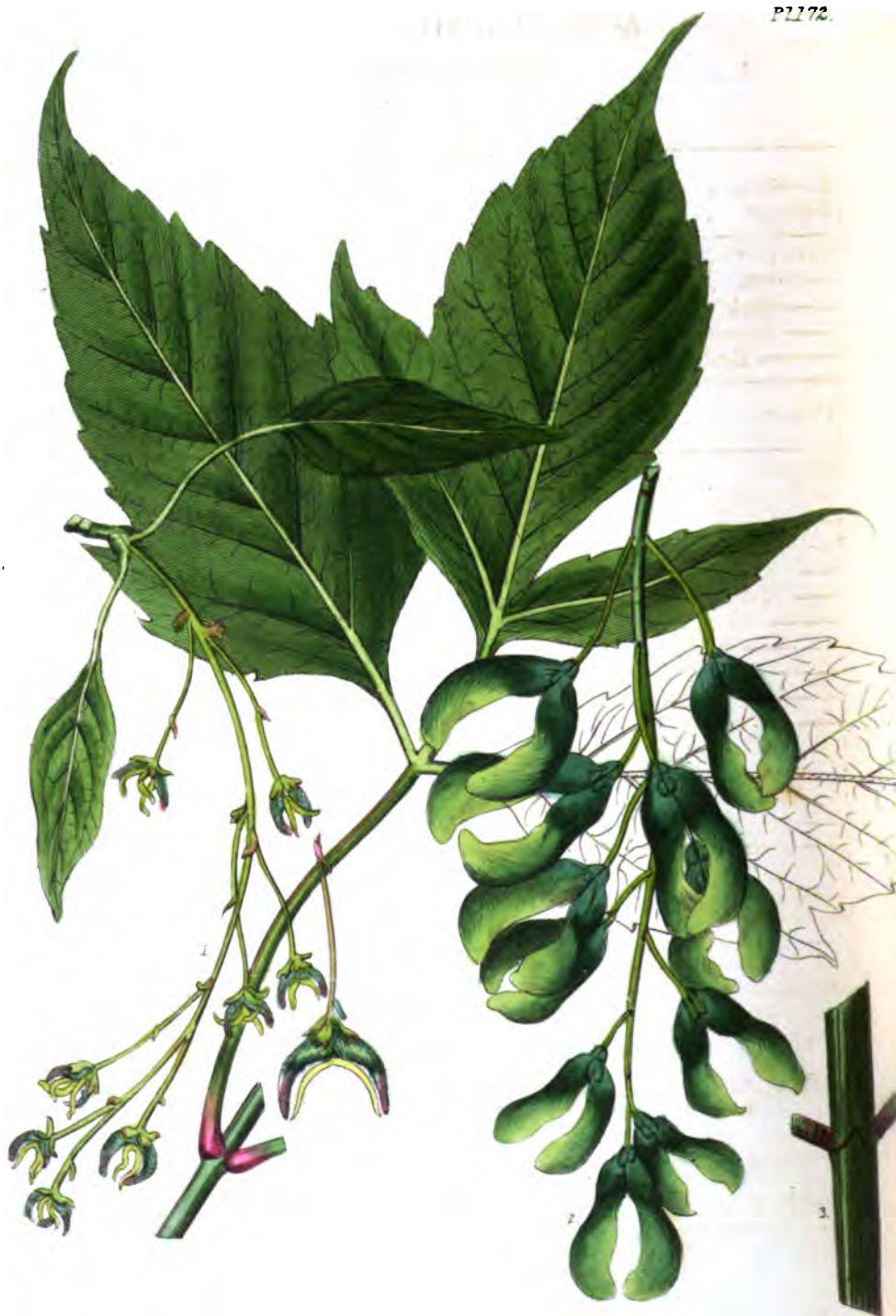
ACER OPALUS. (W.)

Italian Maple.

<i>Leaves</i>	<i>subrotund, obtuse, 5-lobed-dentate.</i>
<i>Corymb</i>	<i>lax, erect.</i> (W.)
<i>Shrub</i>	4—5 F.
— <i>Branches</i>	divaricated.
— <i>Epidermis</i>	purplish-brown, glab.
<i>Petiole</i>	pink, glab. long, 2 inches.
<i>Leaves</i>	opposite.
— <i>Figure</i>	cordate-circular, 5-lobed, 2 lower very short.
— <i>Base</i>	"
— <i>Tomation</i>	(discal) shallow, $\frac{1}{3}$.
— <i>Sinus</i>	obtuse.
— <i>Lobes</i>	short, roundish.
— <i>Sides</i>	straight.
— <i>Points</i>	obtuse.
— <i>Margin</i>	crenate-dentate.
— <i>Dents</i>	short, subobtuse, in=.
— <i>Sinus</i>	obtuse.
— <i>Sides</i>	excurved.
— <i>Vertices</i>	generally obtuse.
— <i>Surface</i>	reddish-green, glab.
— <i>Subface</i>	yellow- "
— <i>Parenchyma</i>	pubescent.
— <i>Nerves</i>	5 principal diverging from a point at base of leaf, elevated, pubescent.
— <i>Ramifications</i>	"
<i>Inflorescence</i>	umbellate-corymbose, 11-flowered,
<i>Gonophore</i>	thin, rather scolloped.
<i>Calyx</i>	4-fid, yellow-green, smooth, veined, petal-like.
— <i>Segments</i>	lanceolate.
— <i>Sinus</i>	obtuse-angular.
— <i>Sides</i>	straight.
— <i>Apices</i>	obtuse.
<i>Corol</i>	nearly = length of calyx, 4-petaled.
— <i>Petals</i>	narrow-lanceolate, intire, yellow-green, veined.
<i>Stamens</i>	8, shorter than petals, inserted under the edge of the gonophore.
— <i>Filaments</i>	glab. tapering.
— <i>Anthers</i>	" . oblong, 2-lobed.
— <i>Lobes</i>	narrow, adnate, opening at sides.

Ovary	pubescent, flat, with erect, red-tipt, nascent wings.
— Style	long, attenuated.
— Stigmas	2, = half length of style.
Samaras	2, adnate.
— Wings	reddish, terminal, obtuse, nerved, suberect.
Florescence	18th May, 1824.
Place	T. Canham's, Esq. Twickenham.
Country.	Switzerland, Italy.
Dissection	1. a flower seen from above to shew the stamens. 2. ovary, style, and stigmas taken from its center.





ACER NEGUNDO ♀. (W.)

*Ash-leaved Maple.**(Box Elder.)*

<i>Leaves</i>	<i>pinnate or ternate, inequally serrate.</i>
<i>Flowers</i>	<i>dioicous. (W.)</i>
<i>Tree</i>	60 F. with roundish head.
— <i>Stem.</i>	8 F. Diameter at 3 F. from ground 22 inches.
— <i>Bark</i>	crack in various directions.
— <i>Branches</i>	numerous, lower hanging, cylindric.
— <i>Epidermis</i>	fine green, glab. strewed with a few rusty warts.
<i>Petiole</i>	{ (common) glab. cylindric, 4½ inches. (foliolar) short, ½ inch, pubescent on the groove.
<i>Leaves</i>	opposite, impair-pinnate.
— <i>Foliales.</i>	3, (one pair and unpair.)
— <i>Figure</i>	lanceolate, oft very irregular, simple or 2-3-lobed.
— <i>Base</i>	attenuated.
— <i>Apex.</i>	acuminate.
— <i>Margin</i>	inequally remote-serrate.
— <i>Serratures</i>	obtuse-angular.
— <i>Sinus</i>	various.
— <i>Sides</i>	long, excurved, inner short.
— <i>Vertices</i>	obtuse.
— <i>Surface</i>	glab. yellowish-green.
— <i>Subface</i>	concolor, dull
— <i>Axis</i>	elevated
— <i>Ramific.</i>	irregular
— <i>Veins.</i>	transparent, beautifully ramified. }
	{ all long white pubescent.
	<i>(Inflorescence.)</i>
<i>Raceme.</i>	simple, pendant, 7-flowered.
— <i>Anthopode.</i>	glab.
— <i>Pedicels.</i>	very long.
<i>Perigone</i>	5-sepaled.
— <i>Sepals</i>	dilated upwards, dentate, pubescent.
<i>Pistils</i>	3.
— <i>Ovary</i>	pubescent, flattish, 2-lobed, arched-converging.
— <i>Stigmas</i>	2, in center of lobes of ovary, subulate, sericeous = tips of lobes.
<i>Samaras.</i>	2, adnate.
— <i>Wings</i>	crescent-shaped, rather closed, nerved.
<i>Floration</i>	8th May, 1824.
<i>Place</i>	Arboretum, Kew.

Country	On the Banks of Rivers, Pennsylvania to Carolina.
Dissection	? 1. raceme of flowers. 2. " fruits (samaras.) 3. part of a branch.

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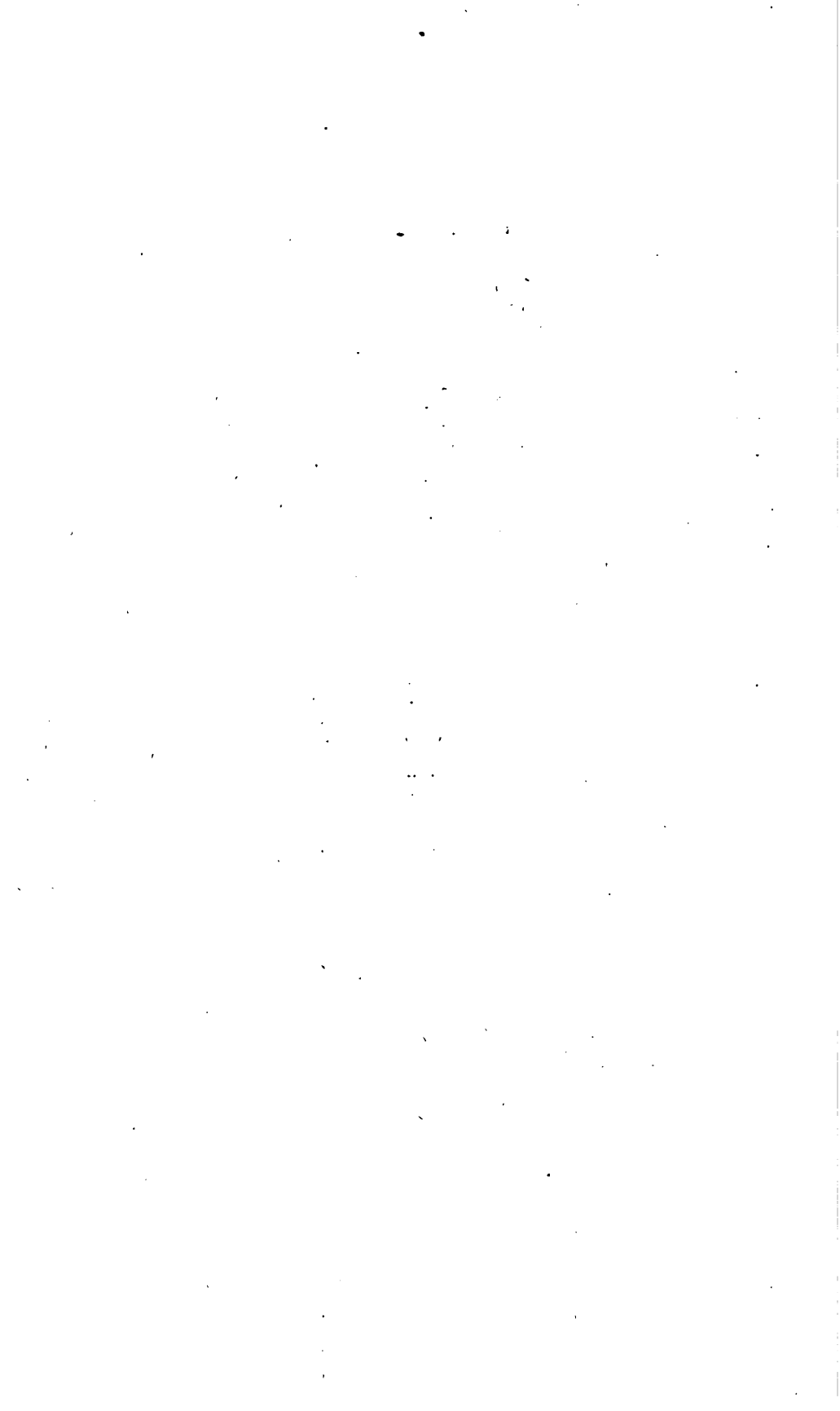
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Observation.—The synonyms in *Italics* above enumerated are principally from Steudel, (*Nomenclator Botanicus*, 1—80. 1821) and compiled by him, with amazing industry, from Willdenow, Persoon, Lamarck, Pursh and others, in whose Works they stand and are, no doubt, in some cases erroneous, though these authors have probably had good reasons for inserting the names as synonymous with their own. To verify them would be to inspect the different existing Herbaria (for some are now no more) of these Botanists, a thing utterly impossible, so we must be satisfied with the often imperfect diagnoses they have quoted. The table will, however, be exceedingly useful to regulate the names, as the same plants are frequently found in gardens under various appellations, which occasions considerable confusion. The generic word in roman is to be used with its own specific names in roman, and also with all the single specific names that follow it in *italics*, when not accompanied by a new generic name in *italics*, which last, when it intervenes, only governs the specific name in its line, and not any other in *italics* that may follow it. The synonymous generic names occur again in the alphabetic series, and are referred to the adopted genera by the word *vid.*

ABBREVIATIONS.

Ait. Aiten.
 Baumg. ... Baumgarten.
 Borck. ... Borchhausen.
 Brot. Brotero.
 Burgad. ... Burgsdorf.
 Cav. Cavanilles.
 Curt. Curtia.
 D. C. Decandolle.
 Desf. Desfontaines.
 Deles. Delessert.
 Duh. Duhamel.
 Diet. Dietrich.
 D. R. Du Roi.
 Ehr. Ehret.
 Enc. Encyclopédie.
 Gä. Gärtner.
 Gmel. Gmelin.
 Güld. Gildenstädt.
 Haw. Haworth.
 Herit. Heritier.
 Hort. Hortulan.
 H. K. Hortus Kewensis.
 H. P. " Parisiensis.
 H. & B. ... Humbolt & Bonpland.
 Hrb. Herbarium.
 Jacq. Jacquin.
 Jus. Jussieu.
 Lam. Lamarck.
 Lap. Lapeyrouse.
 Lod. Loddiges.
 L. Linnæus.
 L. f. " , filius.
 Marsh. ... Marshal.
 Meerb. ... Meerburg.
 Mil. Miller.
 Mö. Mönch.
 " Weis. " , Weissenstadt.
 " M. " , Method.

Mühl. Mühlenberg.
 Mur. Murray.
 M. Michaux.
 M. A. " , Arborea.
 M. F. " , Flora.
 Nest. Nestler.
 N. S. New Species.
 Nut. Nuttall.
 Pal. Pallas.
 Poir. Poiret.
 Pour. ... Pouret.
 Ph. Pursh.
 P. Persoon.
 P. W. W. Peter William Watson, the author.
 Röhl. Röhring.
 Rich. Richard.
 R. & P. ... Ruiz & Pavon.
 R. & S. ... Römer & Schulze.
 Salis. Salisbury.
 Schr. Schrank.
 Scop. Scopoli.
 Sm. Smith.
 Spreng. ... Sprengel.
 Steud. ... Steudel.
 Targ. Toz. Targioni Tozzetti.
 Thuil. Thuillier.
 v. Varietas.
 Vent. Ventenat.
 Vill. Villars.
 Walt. Walter.
 Wang. ... Wangenheim.
 Weig. Weigel.
 W. Willdenow.
 W. E. " , Enumeratio.
 " Sup. " , Supplementum.
 W. B. ... " , Baumzucht.
 W. H. ... " , Hortus Berolinensis.
 W. & K. ... Waldstein & Kitaibel.



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PROPERTIES AND ARTIFICIAL USES

or

SOME OF THE PLANTS

FIGURED IN DENDROLOGIA BRITANNICA.

THE Author begs to call the attention of enterprising, travelling Botanists, to note as much as possible the habits, magnitude, properties and artificial uses of the Plants that become the objects of their observations. These important subjects are too much neglected, and Botanic Works of the first merit are often without a single notice on them in the plants enumerated; while very short observations, however imperfect, would excite the farther attention of future Naturalists, and give an interest to local inhabitants. The following observations are compiled from the most respectable authorities. The reputed medical properties are sparingly quoted and must be sought for in the numerous treatises extant.

BISEXUAL.

Plant	2. FONTANESIA PHILLYRÆOIDES. grows plentifully about Alexandria. (use) in dying by the English.
Plant	3. ILEX OPACA. (use) for making hedges.
Bark, inner	(use) makes birdlime.
Wood	heavy, compact, with white blea and brown heart. green, fine, brilliant when polished. (use) inlaying, turners' work, ships' pullies, &c.
Berries	purgative, excite vomiting.
Branches and Leaves .	9. LYCIUM BARBARUM. (use) dye green, varying yellow.

<p>Bark</p> <p>Wood</p> <p>Root</p> <p>Branches and Berries .</p> <p>Leaves</p> <p>Berries</p>	<p>15. RHUS GLABRUM.</p> <p>(use) in tanning cordovan. satiny, yellow or green, takes a fine polish. flamed yellow-brown and violet. light. not durable. (use) cabinet making. same as stem and speckled. (use) inlaying. boiled, yield a black, ink-like tincture. often mixed with tobacco. red, eaten by boys. (use) dye red.</p>
<p>Bark</p> <p>Wood</p> <p>Branches and Leaves .</p> <p>Berries</p>	<p>17. RHUS TYPHINUM.</p> <p>(use) in tanning. yellow, flamed, very light. (use) for small cabinet work (and also the root.) dye olive-green and other colours. (use) applied medicinally in hæmorrhages. produce a hatters' black dye.</p>
<p>Plant</p> <p>Juice</p> <p>Wood</p> <p>Pith-Canal</p> <p>Seeds</p>	<p>19. RHUS VERNIX.</p> <p>considered poisonous by many. (between bark and wood) whitish-yellow, milky, very corrosive and poisonous. is taken from three years old plants or shoots, and also from the stem by making incisions in the bark. (use) blackens in the air, and becomes a varnish, which the Japanese use to lacquer their vases and other utensils. light, fungous. large. (use) yield an oil for lamps and making candles.</p>
<p>Plant</p> <p>Bark and Leaves . . .</p> <p>Fruit</p>	<p>136. RHUS CORIARIA.</p> <p>(use) cultivated in Spain for tanning goat skins. dye black. astringent, antiseptic. used as a seasoning (condiment) by the Turks.</p>
<p>Height</p> <p>Bark</p> <p>Wood</p> <p>Leaves</p>	<p>27. PRINOS GLABER. (<i>Indian Tea.</i>)</p> <p>8—10 F. glab. dark-brown. whitish, tough. (use) boiled, yield a wholesome tea.</p>

Height	30. PRINOS VERTICILLATUS.
Bark	10—12 F. \varnothing 2—3 inches diameter,
Wood	glab. dark-brown,
Berry	white, tough.
	scarlet, 6-celled,
Height	163. ÆSCULUS FLAVA.
Wood	60—70 F. Diameter, 3—4 F.
	soft, not durable, little used.
Root	164. ÆSCULUS PAVIA.
	(use) in hot water, washes woollens like soap.
Height	44. ARISTOTELIA MACQUI.
Berries	10—12 F.
	(use) in Chili the berries are eaten by the inhabitants,
	and a kind of wine made from them, used also in
	sore throats and feverish complaints.
Height	134. TILIA AMERICANA.
Bark	80 F. \varnothing 4 F. diameter.
Cellular Integument	blackish, rough.
Wood	separated from epidermis, may be made into ropes.
	white, tender, light.
	(use) for pannels of carriages, but not so good as tulip
	tree. (<i>Liriodendron Tulipifera</i> .)
Height	135. TILIA PUBESCENS.
Wood	less than Americana.
	(use) not much esteemed.
Plant	138. GLEDITCHIA TRIACANTHOS.
Bark	makes good hedges.
Wood	produces sugar.
Legumes	glab. bright green.
Pulp	whitish-yellow, very close and tough, good-working,
	hard when well seasoned.
	(use) from these a mead is made, and whole gardens
	planted for the purpose in Virginia.
	(use) produces a fermentable liquor.
Root and Stem	84. ASTRAGALUS TRAGACANTHA.
	(use) a juice oozes from them which coagulates into
	a gum.

1. *Tragacantha Dicta*.—Of slender, long, cylindric, twisted threads.
 2. *Messana*.—White, transparent, yellow, or reddish, and blackish lumps. This is an inferior kind.

MONOECIA.

* *Fruit inferior.*

Bark Cork Wood	89. QUERCUS SUBER. the corkwood of commerce. (use) burnt produces spanish black. (use) makes fine charcoal.
Plant Bark Wood	90. QUERCUS ILEX. of slow growth. (use) tana. compact and of long duration.
Plant Fruit Bark	91. QUERCUS COCCIFERA. feeds the <i>Coccus ilicis</i> . (use) roasted or boiled eats like chesnuts. (use) tana.
Wood Fruit	92. QUERCUS CERRIS & 98. V. DENTATA. (use) excellent for ship-building. grain large, open, decays rapidly. Knowles. (If he mean this species.) boiled or roasted eaten like chesnuts.
Wood Nuts	148. JUGLANS ALBA. white, very tough. (uses) by coopers, fan-makers, waggon-wrights, joiners, coach-makers, &c. better fuel than any other sort of wood. produce an oil,—by boiling in water the oil floats. yield a little sugar.
Impulsion Wood	158. JUGLANS NIGRA. in 25 years, 50 F. quicker than <i>J. regia</i> —yields timber in 25—30 years. brown, mixed with pale and dark veins or spots. fine compact grain, bears a beautiful polish. flamed and oft speckled, dark brown-black, polishes well, (much finer than <i>J. regia</i> .) not eaten by sea-worms.

	<p>strong, tenacious, does not warp and split when thoroughly seasoned.</p> <p>(fresh) the sap-wood is white, the heart-wood violet, but becomes nearly black by exposure to the air ; (from this circumstance it is called <i>black</i>.)</p> <p>(use) extensive in cabinet-making, turners' ware, house and ship-building, for musket-stocks, wheel-maves, &c.</p> <p>good fuel.</p> <p>posts will last 20—25 years underground.</p> <p>canoes 40 F. long, and 2—3 Feet wide, are made of a single trunk!</p> <p>exported in large quantities from North America.</p> <p>remains sound a long time though exposed to heat and moisture.</p>
— (Heart)	
Sarcocarp (husk)	dyes brown.
Nuts	sold in the markets of New York &c. and served up at table.
Kernel	makes a kind of bread.
	<i>N. From its magnitude and usefulness, certainly worthy of more extensive cultivation in Britain as a forest tree.</i>
<hr/>	
Height	70—80 F. Diameter, 3—4 F.
Wood	strongest and most tenaceous of the hickeries.
	(use) axle-trees, axe-handles & wheel-wright-work.
<hr/>	
Wood	98. CARPINUS ORIENTALIS.
	very durable.
<hr/>	
Plant	157. CARPINUS AMERICANA.
Wood	fit for trellises.
Branches	white, very compact, fine-grained.
	(use) ships' pullies, &c.
	give woollen a handsome, lasting, mordore colour.
<hr/>	
Wood	143. OSTRYA VULGARIS.
	very compact and good for solid works.
<hr/>	
** Fruit Superior.	
<hr/>	
Wood	168. SALISBURIA ADIANTIFOLIA.
	of a soft tissue.

Height	159. MORUS NIGRA.
Tender Shoots & Bark	24 F.
Bark (inner)	produce a flax (silk.)
Wood	(use) soaked in water may be made into cordage.
	(use) dyes olive, which is not discharged by vinegar or soap.
	supple, flexible.

♀

*** Flowers naked.

	100. PLATANUS OCCIDENTALIS.
Impulsion	quick from cuttings.
	in 4 years, 20 F. per 5 inch diameter.
	in 12—15, produces fence-wood.
Roots	in 30—40, timber trees 60 F. per 3½ F. circumference.
	beautiful red.
	exhibit the concentric circles and medullary rays very distinctly.
Bark	is shed every spring and again renewed.
	(use) while young is easily peeled off, and made into canoes, boxes, &c. by the North American Indians.
Wood	white or whitish-yellow, close, juicy, heavy, tough, smooth, hardish, without grain.
	soon decays in the air.
	(use) for building-timber, bedsteads, fuel.
	by turners, table-makers, carvers, mathematic-instrument-makers.
	but little used by cabinet-makers, as it easily warps.
	canoes above 60 F. long, carrying 9,000 lbs. are made of a single tree!
Branches	yield a brown dye.

	101. PLATANUS ORIENTALIS.
Bark	exfoliates (sheds.)
Wood	not very hard, fine tissue, marbled with an infinity of reticulated, small veins.
	(use) for fine cabinet-work.
	the Greeks make boats of the large trunks.

	94. BETULA ALBA.
Impulsion	requires 40 years to become a timber-tree.
Plant	yields a small quantity of syrupy sugar, and the sap a spirituous liquor.
Leaves	(use) given to sheep and hayed by the Norwegians.
	as tea by the Finlanders.

Bark	(use) prepared and occasionally eaten by the Kamtschadales. made into baskets, mats, cords, boxes, shoes, belts and cloaks by the Laplanders. dyes cloth reddish and woollen yellow: tans.
Wood	fine-grained and variegated with red, bears a good polish, not brittle. one dry F. weighs about 24 kilogrammes, (= 22 lbs.) burns rapidly with a clear flame. (uses) esteemed by joiners, turners, cabinet-makers, last and clog-makers, waggon-wrights. for various furnitures, handles of utensils, boxes, trenchers, brush-heads, &c. by smelters, 4 parts, equal to 3 of beech. produces charcoal for gunpowder. makes lamp black for printing.
Exostoses	(of the trunk) made into hollow vessels by the Laplanders with their knives, which are equal to the finest turnery.
Aments	produce a wax.

95. BETULA EXCELSA.

Height	40—50 F.
Bark	whitish. (inner) yellow-reddish, and very tough.
Wood	whitish (equal to <i>B. alba.</i>)

97. BETULA PUMILA.

Root	deep red. (use) for inlaying.
----------------	----------------------------------

144. BETULA LENTA.

Impulsion	in 19 years, 45 F.
Plant	yields sugar, but not so good as the maple.
Bark	(inner) thick, tough. (use) made into canoes. tans.
Wood	white, tough and tolerably compact, capable of a fine polish. when fresh rosy, deepening by exposure to light. grain fine, close. (use) esteemed by cabinet-makers and by coach-makers for frames and pannels. capital for fuel and charcoal. <i>N. Ought to be introduced freely as a timber-tree and planted in parks and gardens for both use and ornament.</i>

Plant Impulsion Bark Wood	151. BETULA POPULIFOLIA. yields a bad syrup-sugar, in 4 years, 16 F. (outer) white, thin. (inner) brownish, $\frac{1}{4}$ inch thick, and very tough. (use) made into canoes by the natives. whitish, tolerably compact and tough. very soft, brilliant when polished, and perfectly white. speedily decays. (use) not much employed. for fuel and making charcoal.
Bark Wood	152. BETULA PAPYRACEA. (use) flakes (laminä) 10—12 F. long, $\frac{1}{2}$ 2 F. 9 inches wide, may be peeled off and made into canoes. one calculated for 4 persons and their baggage only weighs 40—60 lbs!—Some are made to carry 15 passengers. makes boxes, baskets, portfolios, &c. (fresh) strong, reddish, sap-wood white. (grain) fine, glossy. a section of the trunk, close below the first ramifications, exhibits elegant undulations of fibre. soon decays exposed to wet and dry, (but fully equal to <i>B. Alba.</i>) (use) excellent fuel. sold in thin veneers (laminä) to cabinet-makers, for inlaying.
Plant Bark Wood	153. BETULA NIGRA. (use) produces sugar, though not so good as from the sugar maple. greenish on old trees, reddish (or cinnamon) on those of 8—10 inch diameter (whence its common name <i>red.</i>) (use) for tanning. made into baskets, portfolios, shoe-soles—canoes made of it so light, that a man can carry one on his back from river to river. compact and nearly white, (the sap and heart subconcolor.) longitudinally marked with red vessels intersecting each other in different direction.
Tree Wood	99. CORYLUS COLUMNA. fine, large. (use) may be employed in building.

POLYGAMIA MONOECIA.

Height	106. PLANERA CARPINIFOLIA.
Wood	30 F. hard, strong, elastic, supple, compact and useful.
Plant	160. ACER TATARICUM.
Wood	little affected by sea air. flexible.
Tree	169. ACER RUBRUM.
Bark	(use) produces sugar and treacle. (use) dyes dark-blue. writing ink may be made from it.
Wood	(use) excellent for furniture, bedsteads, chairs, turners' work, &c.
Wood	170. ACER STRIATUM.
	jaspid.
Wood	171. ACER OPALUS.
Roots and Stems	very compact, veiny. (use) for gun-stocks. become knotted by pruning. hard and veined. (use) made into snuff-boxes, inlaid work, &c.
Height	172. ACER NEGUNDO.
Impulsion	40 F. on fresh soil. rapid, at 15—20 years is at maturity.
Wood	rather tender, fine, even-grained, saffron-colour, slightly mixed with violet. elastic, sonorous. (use) works well, and esteemed for inlaying, pannels, ceilings, boxes, furniture, &c.
Height	105. CELTIS AUSTRALIS.
Wood	60 F. hard, supple, elastic, good-working, brownish, tough, close. compact, heavy, without sap-wood, tenaceous. susceptible of a fine polish, satiny in the oblique section.

	not attacked by worms. very durable. (uses) employed for wind instruments, sculpture, &c. contains a colouring substance that dyes wool. made into knife-handles, &c. yields oil by expression.
„ (of Root)	
Kernel	
147. CELTIS OCCIDENTALIS.	
Height	50 F. & 2 F. diameter.
Bark	glab. white-gray.
Wood	whitish-yellow, close, tough, hard, flexible. (use) not extensive in America. esteemed by waggon-wrights for shafts and frames of carriages.
104. AILANTHUS GLANDULOSA.	
Tree	very high and of a picturesque form. keeps its leaves till November.
Growth	rapid.
Wood.	satiny, very hard, though the tree is of quick growth. solid, white, fine-grained. (uses) fine inlaid work made of it. by joiners and cabinet-makers, but must be very dry or it warps.
DIOECIA.	
111. SMILAX SARSAPARILLA.	
	used in medicine as a sudorific.
102. POPULUS MONILIFERA.	
Impulsion	rapid.
Wood.	in 20—30 years 60—70 F. per 2—3 F. diameter. softer than <i>P. Canadensis</i> , (<i>lævigata</i>) cotton wood.
103. CORIARIA MYRTIFOLIA.	
Fresh Branches & Leaves	(use) yield a clear, pale-yellow liquor, which dyes purple.
Leaves	(use) to dye black and as a preparative for dark colours. yield a tan.

POLYGAMIA DIOECIA.

	107. FRAXINUS ORNUS. manna procured from it in Calabria.
Plant	yields a purgative gum.
Wood	whitish, tough. sap-wood green. heart-wood brown, hard, compact, strong, elastic, but splitty. of short duration exposed to the air, and only good for dry purposes. (uses) planked and made into handles for utensils, gun-stocks, &c. for cabinet and joiners' work. for large screws, mallets, lasts, wedges, shafts of chaises, &c.
Branches and Leaves .	contain dye-matter.
Fruit	when ripe very agreeable to the taste. cider and brandy extracted from it in America. nourishing and pleasant-tasted cakes are made from the flesh, separated from the pellicle and seed and dried in the sun or by fire. formed with bran into cakes, and into yeast to ferment beer.

CONIFERÆ.

Height	149. THUJA ORIENTALIS. 25 F.
Wood	very hard, and resists putridity.
Wood	150. THUJA OCCIDENTALIS. reddish, subodorous, soft, fine-grained, capable of a good polish, light, supple, good-burning. incorruptible in the air, on the ground, or in water. 117 concentric circles in 4 lines diameter. (uses) as fence-posts, will last 35—40 years. frames for canoes. planked for ship-building. splittable into laminæ for shingles. dye yellow.
Young Branches . .	

<p>Height</p> <p>Wood</p> <p>Nut</p>	<p>155. CUPRESSUS SEMPERVIRENS.</p> <p>very tall, and stem straight.</p> <p>close, reddish, dark-veined, much esteemed, not eaten by worms, penetratingly odoriferous.</p> <p>hard, compact, pale or reddish.</p> <p>hardens in water, very durable.</p> <p>(use) very astringent and febrifuge.</p>
<p>Impulsion</p> <p>Wood</p>	<p>156. CUPRESSUS THYOIDES.</p> <p>grows in swamps.</p> <p>in 20 years, 25 F.</p> <p>requires 60 years to become a timber tree.</p> <p>white, very fine-grained, light, soft, easily worked, of a rose hue when seasoned.</p> <p>not eaten by worms, very durable above ground.</p> <p>resists succession of dry and wet better than any other.</p> <p>will last 50—60 years as fence-rails, &c.</p> <p>concentric circles always distinct.</p> <p>277 annual layers in a branch of 21 inches diameter.</p> <p>(uses) for shingles will last 50 years.</p> <p>canoes made of it.</p> <p>for ship-timber, buildings, deals, staves, rails, pails, wash-tubs, churns, sound-boards for pianos, &c.</p> <p>yields planks 10—12 F. long & 13 inches broad.</p> <p>burns to good charcoal and lamp black.</p>
<p>Plant</p>	<p>142. EPHEDRA MONOSTACHYA.</p> <p>(use) put into beer gives it a singular, intoxicating property, producing springing and jumping till the person falls down exhausted.</p>
<p>Bark</p> <p>Acorns</p>	<p><i>Additional to 89. QUERCUS SUBER.</i></p> <p>taken off when the tree is 20—30 years old, though it is then porous and good for little.</p> <p>at third peeling it will be in perfection, and will continue so many years, for the best cork-wood is taken from old trees.</p> <p>peeled every five, six, seven, or eight years in July.</p> <p>fatten hogs better than those of the common oak,</p>

LINNEAN INDEX

WITH

NOTICES ON THE SOIL, EXPOSURE (SITE) AND PROPAGATION OF
THE TREES AND SHRUBS

PUBLISHED IN

DENDROLOGIA BRITANNICA,

PLATES 1—172.

The following particulars were principally compiled from the best authorities. It would deviate too much from my plan to enter into more detailed minutiae, and I must refer to Miller, and other more recent works, expressly written on the subjects, for more extensive information, though these works generally give instructions relating to the practice of Nurserymen more particularly.

I still consider a good work on the propagation and cultivation of Forest Trees a desideratum, noting the process and management under each individual species, and not in a loose, generic way, as is most generally done—as some species in the same genus often require very different treatment—watching and stating their impulsion (growth) at various periods in different soils and situations, and comparing their differences—citing places where trees have attained their largest magnitude, and strikingly superior vigour and growth—period of maturity—causes of occasional languid appearance and morbidity. These particulars are not attainable by nursery practice, but, by long and attentive study of the objects as they advance in their natural state (or final habitat) and noting the difference in vigour, magnitude, &c. of the same species, in different places of growth, and offering substantial reasons for these differences.

Such observations ought to be tabulated in clear detail on each species, something in this way—

* *Natural state.*

1. Habitat, (place of growth.)
 - Soil.
 - Site.
2. Magnitude.
 - Habit. (aspect.)

3. Artificial uses.

These particulars can only be observed by localists or travelling botanists.

* * *Artificial state (management under the care of the propagator and cultivator.)*

1. Propagation. Part—seed.

layer, cutting.

sucker.

graft, bud, &c.

2. Culture in the seminary.

„ nursery.

3. Culture and management in the Final Habitat.

4. Impulsion at different periods.

5. Morbidity.

6. Magnitude.

7. Artificial uses.

These observations would require long attention on a large and varied scale. Present conclusions can only be drawn from viewing the subjects in our best-grown Parks, as at Kew, Sten, Pain's Hill, Croome, various places in the Parish of Fulham, &c.

WHERE the object of the cultivator is merely a few ornamental Shrubs, the risk is trifling; general instructions are sufficient; but in cases where hundreds of acres are allotted for Woods and Plantations, it becomes a serious question with the Proprietor to consider the nature of the soil and exposure of his ground, and whether they are suitable to the growth of such species as he purposes to cultivate.

For want of this necessary previous knowledge, we see many, often extensive Plantations, languishing and sickly, and producing ultimately unprofitable crops.

Those plants in the following table with an asterisk(*) grew in the natural, common garden ground: those not marked were in prepared ground of heath-mould (taken from heaths where common ling grows naturally) or in heath-mould mixed with light loam.

Mr. HILL, of Leytonstone, grows Rhododendrons, Azaleas, Vacciniums, &c. (American bog-plants) in the common ground of his gardens (it may be a free, light soil) and his plants look very well.

N. The particulars corresponding with the generic name only, mean that most of the cultivated species of the genus agree in requiring the treatment there stated, though it is often, no doubt, of too general a nature.

Class.	Genus.	Species.	Soil. Site. (Exposure.)	Part propagated.	Miscellaneous.
2. 1.	Ligustrum	..lucidum ..137	* sand-loam.... (against a wall.)	Cuttings... Grafts.....	
2. 1.	Chionanthus	..virginica .. 1	peat-loam.....	Seed.....from North America. sow immediately after arrival in large pots of fresh loam, and plunge in a shady border (or in a hot-bed.) rarely grows first year. move into a frame to shelter from Oct.—April. prick out seedlings into pots for 1—2 years, then finally plant. Layers.....require at least 2 years. Grafts.....on the ash.	
2. 1.	Fontanecia	..phillyræoides 2	free, light..... heath-mould...	Seed.....in spring. Layers..... Cuttings...under a hand-glass in Spring. Suckers.... Slips.....separated in Autumn.	
4. 1.	Cissus	.....orientalis..113	*	Layers..... Cuttings...	
4. 1.	Elaeagnus	....argentea...161	*common.....	Layers..... Cuttings...will root in one year.	
4. 4.	Ilex	.....	free, light,..... sand.....	Seed.....sow when ripe. lies 2 years before germination. bury for a year in earth, or in a large tub or pot plunged in the earth till Oct. following. replant spring following. Plants.....to remain in seminary 2 years. Cuttings...taken off from a joint. Bud or } on common kind for varieties. Graft .. } Layer.....	
		opaca 3 dahoon-an- gustifolia 4 " major 114 prinoides...115	* * * *		
5. 1.	Azalia	.....	sand-peat or sand loam..... (shady)	Seeds.....imported and sown in spring in wide pots. Layers.....in Autumn or Spring. Root-suckers.	
		glauca.... 5 hispida... 6 speciosa...116			

Class.	Genus.	Species.	Soil. Site. (Exposure.)	Part propagated:	Miscellaneous.
5.1.	Lonicera.....	chinensis 117	* (shelter'd against a wall.)	Cuttings...Oct.--March. Layers.....Autumn--Spring.	
5.1.	Symphoria....	racemosa... 7	* peat-loam (shade)	Cuttings... Layers.... Sucker....	
5.1.	Lycium		light.....	Seed.....tedious. Sucker..... Layers....in spring. Cuttings...October--March, will be good plants by Oct. following.	
		chinense.. 8	*(against a wall.)		
		barbatum. 9	*(do.)		
5.1.	Bumelia.....		(sheltered or against a wall.)		
		chrysophylloides 10	sand... .. *	Cuttings...under a hand glass. Layer....succeeds with difficulty.	
5.1.	Rhamnus.....			Seed	
		latifolia.. 11	*	Layer.....	
5.1.	Itea.....	virginica 12	*	Seed.....from North America. sow in Spring in pots or boxes of light sand-earth, and plunge in the ground till next March. if it does not come up then in a hot-bed, shelter in a frame or green-house for 2 winters. spring following plant in nur- sery, and in 2-3 years finally. Layers....in Autumn or Spring, making a slit in the part to be laid. will be rooted by following Autumn.	
			peat, sandy loam	Suckers	
5.1.	Vitis.....		sand-peat.....	Layers....	
		riparia.... 13	*	Cuttings...	
5.2.	Eupatorium.....	fruticosum 14	common garden. *	Seed.....sown in Oct. in pots--plunge in a frame or hot-bed in spring. Cuttings...under a hand-glass- planted in July--Sept. and sheltered in winter.	
			light..... (mid-sun.)	Layer.....	

<i>Class. Genus. Species.</i>	<i>Soil. Site. (Exposure.)</i>	<i>Part propagated.</i>	<i>Miscellaneous.</i>
6. 2. <i>Atraphaxis</i> ... <i>spinosa</i> ...119	*	Layers Cuttings ...in Spring.	
7. 1. <i>Æsculus</i> <i>pavia</i> , v. sub- <i>lacinata</i> 120 <i>carnea</i> 121 <i>flava</i> 163 <i>pavia</i> 164	* * * all * all	Bud Graft Seed in Spring in pots—plunge in a hot-bed—remove in Oct. to the open air. Seed in open ground. Layer Graft Buds on <i>Hippocastanum</i> . Seed in pots or hot-beds. house for 2 years in winter.	
8. 1. <i>Oxycoccus</i> <i>erectus</i> 31 <i>macrocarpus</i> 122	peat-soil or sand- peat. (moist.)	Seed Layers	
8. 1. <i>Vaccinium</i> <i>demoum</i> . V. <i>humile</i> 32 <i>virgatum</i> 33 " V. <i>angus-</i> <i>tifolia</i> 34 <i>tenellum</i> 35 <i>corymbosum</i> .. 123 <i>marianum</i> 124 <i>grandiflorum</i> 125A. <i>elongatum</i> .. —B. <i>minutiflorum</i> —C. <i>glabrum</i> —D.	peat or very sandy loam. (shaded.) sand sand-peat.....	Seed Layers Cuttings... under a hand glass. Layers best. Suckers (better layers).	
10. 1. <i>Rhododendron</i> <i>obtusum</i> ...162 <i>punctatum</i> V. <i>minus</i> . 162A.	bog	Seed sown in Autumn. Layers Of young wood housed first winter,	
10. 1. <i>Andromeda</i>	peat, sandy loam, sand-peat, or heath-mould.	Seed sown in pots immediately after maturity, or if imported from America, as soon as received, when 1 inch plant in pots, and afterwards remove into open ground. Layers Spring. Suckers " .	

Class.	Genus.	Species.	Soil. Sits. (Exposure.)	Part propagated.	Miscellaneous.
10. 1.	Lyonia	spicata.... 36			
		speciosa. V.			
		glauca.. 126			
		paniculata 37			
		salicifolia.. 38			
		capreaefolia 127			
		multiflora 128			
10. 1.	Clethra		sandy loam....	Layers....in Autumn—sometimes two	
			sand.....	years before rooted.	
		tomentosa.. 39	* sand-peat....	Cuttings...(ripened) under a hand-glass.	
				Seed.....	
				Layers....	
				Suckers....	
10. 1.	Styrax		light, sandy loam	Seed.....in pots of light earth, on a hot-	
			peat-loam.....	bed, immediately after reaping	
			(warm.)	Layers and Suckers, in Spring.	
			*		
		glabrum..... 40	*		
		pulverulentum. 41	*		
		grandifolium .. 129	*		
10. 2.	Hydrangea		common.....	Cuttings,..ripened.	
			(shelter.)	Seed.....	
			peat-loam.....	Layers....	
				Suckers.....of roots in Autumn or Spring.	
		cordata.. 42	*		
		nivea 43	*heath-mould ..		
			(mid-sun.)		
Dod. 1.	Aristotelia		common.....	Seed.....	
		Macqui .. 44	*light	Layer.....	
				Cuttings...in Spring.	
Dod. 1.	Nitraria	Schoberi .. 130	*sandy loam, with	Layers, or	
			a little salt put	Cuttings...under a hand-glass.	
			round it.		
Dod. 3.	Euphorbia	spinosa. .. 45	*common.....		
Icos. 1.	Philadelphus		common.....	Layers....Oct.—March, will be rooted by	
				following Autumn.	
		grandiflorus.. 46	*.....	Sucker....October—March.	
		hirtus 47	*	Cuttings...Autumn or Spring, in a shady	
				border	
Icos. 1.	Prunus		common.....	Layers....	
				Cuttings...	
		serotina 48	* }	Grafts....	
		semperflorens 131	* }	{ Buds and	
				{ Grafts....on Padus.	
				{ Buds.....for varieties.	

Class.	Genus.	Species.	Soil. Site, (Exposure.)	Part propagated.	Miscellaneous.
Icos. 5.	Pyrus	any.....	any.....	Seed.....	Grafts.....on crab, pear, or thorn.
		siniica..... 49	*		
		spectabilis.. 50	* }	Seed, Graft, Bud.	
		baccata..... 51	* }	Graft.....(seed tedious.)	
		edulis..... 52	*.....	Graft.....on aucuparia.	
		sorbofolia... 53	*.....	Graft.....	
		angustifolia..132	*.....	Seed.....	
		americana... 54	*loam-peat....		
Icos. 5.	Mespilus	any.....	any.....	Seed.....	sown just at maturity, in Oct. November, or early in Spring in beds of light earth. generally remain till second Spring before they come up. or bury for one year in a shal- low trench, in Oct.—Nov. and let lie one year—then sow the Spring following. when up plant in nursery in Autumn or Spring, to remain 1—3 years. Graft or Bud..on common hawthorn for V. a. Layers.....in October, will be rooted in 1—2 years.
		eriocarpa... 55	*		
		crus galli.. 56	*		
		punctata.. 57	*		
		glandulosa 58	*		
		flava 59	*		
		purpurea.. 60	*		
		pyrifolia.. 61	*		
		coccinea.. 62	*		
		cordata.... 63	*		
		nigra 64	*		
		parvifolia.. 55	*		
		aronia....165	*		
Icos. 6.	Spiræa	common	common	Seed.....	Layers.....in Autumn or Spring, and trans- plant following Autumn.
		(will grow under flowering shrubs)		Cuttings...with difficulty.	
				Sucker....in Autumn.	
		betulifolia. 67	*		
		carpinifolia 68	*		
		triloba 68	*		
		alba .....133	*		
Icos. Pol.	Rubus	common.....	common.....	Layers....	
	laciniatus.. 69	*	*	Cuttings..	
				Suckers....	
Icos. Pol.	Potentilla	common	common	Layer	
	floribunda 70	(sheltered.)	*	Cutting... ..	
Pol. 1.	Tilia	common, fresh, deep.	common, fresh, deep.	Seed.....	in Spring or just when mature, in beds of common earth. Layer, (alut) of 1—2 years old, in Autumn or winter. will root following Autumn.

Class.	Genus.	Species.	Soil. Site. (Exposure.)	Part propagated.	Miscellaneous.
		americana 134 pubescens 135 alba 71	* } * }	Graft Cuttings...not so good as layers. Layer, Sucker, Graft, Inoculation.	
Pol. Pol.	Clematis	.....	common, or sand peat.	Seeds. ....sown just when mature. lie one year before vegetation. Layers ....young shoots of present and last year. best laid in summer, and will be rooted in October. transplant in Spring. " , Suckers, and Division of Roots.	
		reticulata... 72 glauca..... 73 virginiana... 74 angustifolia 112	*		
Diad. 10.	Genista	.....	common.....	Seed.....in beds of common earth, Sept. —Nov. or Spring. Layers....	
		cinerea..... 76 ovata 77 scorpius.... 78 triquetra.... 79 candicans.... 80	* * * sand-peat..... (against a wall.) *	Cuttings ...	
Diad. 10.	Amorpha	.....	common light, fresh, or sand- peat. (sheltered.)	Seed.....from America, and sown on a bed in Spring or October. transplant following Oct.	
		croceolanata 139	*	Layers Sucker.... Cuttings...taken off at a joint in Autumn. Divisions...of roots.	
Diad. 10.	Cytisus	.....	common.	Seed .....sown in beds in March. Layers,...Autumn or Spring, from an- nular wood. Beds .....on Laburnum or alpinus. (N. very handsome.) Cuttings...Autumn or Spring. Seed..... Cuttings... Seed.....Does not well bear transplant- ing.	
		nanus.... 81 elongatus.. 82 wolgaricus 83	* * sand-loam.....		
Diad. 10.	Colutea	.....	common , , , ,	Seed.....sown February—March. Layers.....Autumn—Spring. Sucker.....	
		media.... 140	*		
Diad. 10.	Astragalus	.....	sandy..... (warm.)	Seeds.....on a hot bed in March, and afterwards finally planted.	

Class.	Genus.	Species.	Soil. Stts. (Exposure.)	Part propagated.	Miscellaneous.
		<i>Tragacantha</i> . 84	*	Cuttings & } Slips.... } in April—May. planted in pots and plunged in a hot-bed about 6 weeks. (or under a hand-glass.) N. Does not bear transplanting, as the roots strike deep.	
Polyadelphia.	<i>Hypericum</i>		common or sand- loam.	Seed.....sown in Autumn will rise in Spring. Layer..... Cuttings...the tender sorts under a hand- glass. Divisions of } Roots.... } in Autumn or Spring.	
		<i>elatum</i> 86 * <i>hircinum</i> ... 86 * „ <i>V. hamilum</i> 87 * <i>prolificum</i> .. 88 * <i>empetifolium</i> 141 *			
M. 3.	<i>Comptonia</i>	<i>asplenifolia</i> 166	heath-mould.... (shaded mid-sun in spring.)	Seed.....if sown in Spring plants will come up next year. Layers....of summer shoots made in Autumn. will be rooted in 2 years. Suckers...if none make an incision with- out moving the plant to cause it to strike.	
M. 4.	<i>Morus</i>			Seed.....sown in the open ground in March, produces the best trees. Layers....take root in one year. Cuttings....Autumn and Spring from shoots of former year, with one joint of 2 year's wood at bottom. Grafts and } Buds... } for V's. (N. Bears in 12—15 years.)	
		<i>nigra</i> 159 *			
M. Pol.	<i>Quercus</i>			Seed..... Graft.....on the common sort. „by approach. Buds.....	
		<i>suber</i> 89 * <i>Ilex</i> 90 * <i>coccifera</i> ... 91 * <i>cerris</i> 92 * „ <i>V. den-</i> <i>tata</i> 93 *	* } * } * } * }	Seed.....sown in hot-beds. „ and Graft	
M. Pol.	<i>Juglans</i>		common leamy	Seed (nuts).best and in February. American sorts in Spring as soon as possible after arrival.	

Class.	Genus.	Species.	Soil. Site, (Exposure.)	Part propagated.	Miscellaneous.
		alba 148 nigra 158 porcina V. ob- cordata.. 167	• • •	Layers.... Suckers....not so good. Graft.....on <i>Regia</i> for varieties.	
M. Pol.	<i>Betula</i>	common.....		Seed.....in Autumn or Spring, on beds of light earth for large kinds. Layers....for small kinds	
		alba, V. pon- tica..... 94 excelsa 95 ovata..... 96 lenta.....144 populifolia..151 papyracea...152 nigra .....153 fruticosa.....154 daurica ..154A. sibirica ...154B. pumila. 97	* * * *..... * * * *..... * * * *.....	Seed..... Graft.....on <i>Alba</i> . Layer..... "	
M. Pol.	<i>Carpinus</i>	common.....		Seed..... Layers....for V's. Grafts.....	
		orientalis... 98 americana...157	* *		
M. Pol.	<i>Ostrya</i>....vulgaris...	143	*sand-loam	Seed..... Layers.... Grafts.....on <i>Carpinus Betulus</i> . a bad practice.	
M. Pol.	<i>Corylus</i>	common.....		Seed (nuts).in spring. Layers....for true varieties. Suckers...October—Spring. Grafts & } for V's. Buds..... }	
		Columna..... 99	*		
M. Pol.	<i>Salisburia</i> ..adiantifolia	168	*common.	Layers } Suckers..... } in February or March. Cuttings... } Branches ..(annicular) and a heel of the 2 years wood. on a shaded hot-bed.	
M. Pol.	<i>Platanus</i>	any,near rivulets.		Seed.....sown in Autumn.	

Class.	Genus.	Species.	Soil. Site. (Exposure.)	Part propagated.	Miscellaneous.
		occidentalis 100 orientalis.. 101	(sheltered.) * *	Cuttings...in October made in winter of the annular shoots, with a heel of the year before wood. Layers....will root in one year.	
M. 1. D.	Thuja.....	orientalis....149 occidentalis...150	*common..... * "	Seed.....best. sow just when at maturity in pots or boxes of light earth in a warm place, or in a frame for shelter. "best. Layers,...in Autumn. Cuttings..in Autumn from annular shoots, with a small part (heel) of the old wood.	
M. 1. D.	Cupressus.....	sampervirens 155 thyoides.....156	common..... *heath-mould .. sandy or gravelly. (warm, south.) light, gravelly. * humid, boggy.	Seed .....procured in cones from abroad. Layers.....of 1—2 years shoots in Autumn. Cuttings...under a hand-glass. Seeds .....produce the handsomest plants, sow in March—April in a bed or border of light earth, or in pots plunged in a hot bed under glass. shelter with a mat or in a frame till 2nd spring after they come up. and finally plant covering first winter. Cuttings... Seed .....sown in boxes, pots, or tubs. oft 1 year before it comes up. Cuttings... Layers.....root with difficulty	
D. 6.	Smilax.....	rubens.....108 quadrangularis 109 longifolia.... 110 sarsaparilla.... 111	sand-peat..... * * * *	Seed.....uncertain. Layers....in Autumn, Suckers.... Root-Divisions..October—Spring.	
D. 8.	Populus...monilifera..	102	*common.....	Seed .....in Autumn. Cuttings...October—Nov. or March. Root-Cuttings..after leaf-fall. Layers.....in Autumn.	
D. 10.	Coriaria...myrtifolia....	103	*common.....	Layers.....in Autumn will be rooted in 1 year. Cuttings of Roots..Autumn—Winter.	

<i>Class.</i>	<i>Genus.</i>	<i>Species.</i>	<i>Soil. Site. (Exposure.)</i>	<i>Part propagated.</i>	<i>Miscellaneous.</i>
D. 1. D.	<i>Ephedra</i>	<i>monoetaphya</i> 142	*common.....	Layers..... Root-Suckers...	separated in Spring.
D. 1. D.	<i>Ruscus</i>	<i>racemosus</i> .. 145	*.....	Seed.....	lies 2 year in the ground. Layers..... Suckers.....(off-sets.)
P. M.	<i>Planera</i>	<i>carpinifolia</i> . 106	*common.....		
P. M.	<i>Acer</i>		common..... (shelter.)	Seed.....	when mature in October. Layers.....Autumn. Cuttings...taken off at a joint and planted in Autumn, fastening the earth well about them,
		<i>tataricum</i> ...160	*all.....	Seed..... Layers....	
		<i>rubrum</i>.....169	*fresh earth sub- merged in water.		
		<i>striatum</i>....170	*dry.....	Graft.....	on <i>Sporocarpium</i> close to ground.
		<i>opalus</i>.....171	*		
		<i>negundo</i>....172	*		
P. M.	<i>Celtis</i>		common..... (sheltered.)	Seed.....	sow in Autumn or Spring on a warm border. the Autumn sowing will come up Spring after. or in pots or boxes. protect young plants for 2 first years.
		<i>australis</i>....105	*.....	Layers..... Root, Suckers. Seed.....	just at maturity in deep pots or cases. some vegetate first and some second year. cover young plants with litter for 2 first years.
		<i>occidentalis</i> ...147	*		
P. M.	<i>Ailanthus</i>	<i>glandulosa</i> ..104	sand loam..... *light, humid. (sheltered.)	Seed..... Sucker.... Cuttings of Roots in Spring.	in a glass frame. in spring.
P. D.	<i>Gleditschia</i>		common, light, dry. (warmsheltered.)	Seed.....	from North America, sown in April in light earth.
		<i>horrida</i> 75	*peat-loam	Sucker..... Layer.....	

<i>Class.</i>	<i>Genus.</i>	<i>Species.</i>	<i>Soil. Site. (Exposure.)</i>	<i>Part propagated.</i>	<i>Miscellaneous.</i>
		triscanthos.. 138	*sand-loam....	Seed.....	sown on a warm border of light earth and will rise same season. Layers....but the plants continue tender.
P. D.	Fraxinus.....			Seed.....	must be buried 1 year in beds or pots of sand before they are sown. do not vegetate till 2nd year.
		ornus..... 107	*common.....	"	sown just at maturity. Layers.... Grafts or Beds...on excelsior for V's.
P. D.	Diospyros virginiana..	146	*peat-loam, or light fresh. (sheltered.)	Seed.....	sown in Spring. in pots or hot-beds sheltered from frost first 2 winters. Layers....

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|--------|--------------------------------|---|
| 10. 1. | Virgilia.....lutea..... | tender and does not flower. |
| | Cercis... ..siliquastrum.... | { flower and fruit. |
| | canadensis..... | |
| D. 10. | Gymnocladus canadensis.... | { do not flower. |
| P. M. | Acacia.....julibrissin..... | |
| P. D. | Gleditschia...triacanthos..... | { I have only observed the males and both flower. |
| | horrida..... | |

(*Leguminosæ-Diadelphous.*)

- | | | |
|-----------|-----------------------------|----------------------------|
| Diad. 10. | Cytisus.....laburnum..... | { flower and fruit. |
| | alpinus..... | |
| | Robinia ....pseudacacia.... | flowers and fruits. |
| | viscosa..... | { flower but do not fruit. |
| | hispida..... | |

(*Amentaceæ.*)

- | | | |
|-------|----------------------|-----------------------|
| M. 4. | Alni..... | all flower and fruit. |
| | Morus.....nigra..... | { flower and fruit. |
| | alba..... | |
| | rubra..... | |

(*European.*)

- | | | |
|---------|----------------------------|---|
| M. Pol. | Quercus ....austriaca..... | I have not found. |
| | cerris..... | { flower and fruit. |
| | „ V. dentata | |
| | ilex..... | |
| | suber..... | |
| | pseudosuber.... | |
| | coccifera..... | |
| | agilops..... | |
| | pubescens..... | |
| | | flowers, but does not fruit. |
| | | (Durmast) I have only found in the nurseries and small. |

(*American.*)

- | | | |
|--|---------------|---|
| | virena..... | { these are the only sorts I have seen in flower. |
| | coccinea..... | |
| | rubra..... | |

The other American species I have only observed in the nurseries and small.

- | | |
|-------------------------|--|
| Juglans.....regia..... | { flower and fruit. |
|nigra..... | |
|porcina..... | |
|cinirea..... | |
|alba..... | |
|illino iensis..... | does not flower, tho' a pretty large tree. |

M. Pol.	Fagus.....	ferruginea.....	only seen small and in the nurseries.
	Castanea....	pumila.....	does not appear to flower.
	Betulä.....	.....	(Chinquapin) does not flower.
	Carpinus....	americana.....	all flower and fruit freely.
		orientalis.....	} flower and fruit.
	Ostria.....	vulgaris.....	flowers and fruits.
		virginiana.....	I have only seen small and in the nurseries.
	Corylus.....	columna.....	flowers and fruits.
	Platanus....	orientalis.....	} flower and fruit.
		occidentalis....	
	Liquidambar	styraciflua....	} do not flower.
		imberbis.....	
	Salisburia...	adiantifolia.....	I have only seen the male, which flowers against a wall.
D. 4.	Broussonetia..	papyrifera.....	flowers and fruits.
8.	Populus....	gräca.....	flowers.
		fastigiata....	} we have only the males, both flower.
		balsamifera ..	
		lävigata.....	flowers in fine Springs.
		angulata.....	I have only observed the female, which flowered imperfectly.
		monilifera..	the male flowers.
			the female flowers and fruits.
			Other American sorts only small and in the nurseries.
(Not Amentaceä or Coniferä)			
5.	Pistacia.....	lentiscus.....	flowers against a wall.
	Xanthoxylum	fraxineum.....	flowers and fruits in fine seasons.
P. M.	Planera.....	carpinifolia....	" "
	Aceres.....	.....	most of the species which I have seen flower and fruit.
		dasycarpon....	I have not found.
		saccharinum....	tho' I have seen large, does not seem to flower.
	Celtis.....	australis.....	} flower and fruit.
		occidentalis ..	
	Ailanthus....	glandulosa.....	I have only seen the male, which flowers profusely.
P. D.	Fraxinus.....	ornus.....	flowers and fruits.
			There are many other species of Fraxinus in the nurseries, but I have observed none in flower.
	Diospyros....	lotus.....	flowers and fruits.
		virginiana....	only flowers which soon drop off.
	Nysse.....	.....	I have only seen young, and in the nurseries.
	Ficus.....	carica.....	flowers and fruits against a wall.

M. I. D. Thuja.	occidentalis....	}	flower and fruit.
	orientalis		
Cupressus....	sempervirens ...		
	thyoides.....		
	disticha.....	}	I have only seen the male which flowers.
D. I D. Junipers	virginiana.....		
	sabina.....		
	thurifera.....		

Casting the eye on the floration, as above specified, particularly the Amén-tacéä, Conifera, and some others, the work of the delineator, in these families, is considerably shortened by the many species, enumerated in our catalogues, that will not flower, and of course not fruit in our Island; so that those who wish to extend their views to the study of many exotic hardy Trees, must have recourse to the Floras and Itineraries of the respective countries in which they are indigenous, to perfect specimens or wait until the extant works have been consolidated into one uniform publication.

The above observations will enable the cultivator to regulate his expectations as to what exotic Trees will really flower.

ERRATA.

Page xxi. under endocarp, add as a synonyme, *Putamen*. Gă.

xliii. dele * *Coronate*.

xliv. for *Hemegyris* read *Hemigyrua*.

lx. *Pteridium* read *Pterodium*.

Quercus. 89, 90, 91, 92, and 93, for *Gland* read *Glans*, (if more proper.)

The candid reader will excuse and correct any small typographic errors he may discover.

ä	is equivalent to	æ.	} and perhaps more convenient.
ö	„	œ.	
ü	„	ue.	

♂ Male.

♀ Female.

♂ & ♀ Bisexual.

DIRECTIONS FOR THE BINDER.

Vol. 1.—Title.

Introduction, pages i—lxxii.

Plate 1—80.

Vol. 2.—Title.

Plate 81—172.

Page 1—30.

The Latin and English Indexes to be placed at the end of the second volume.

No. 4. *Ilex Dahoon* to be cancelled, and No. 4, *Ilex angustifolia*, to be bound in its stead.

97. *Betula fruticosa* to be cancelled, and No. 97, *Betula pumila*, to be bound in its stead.

